

**CLINICAL PROFILE OF PATIENTS ATTENDING THE
OBSTETRIC MEDICINE CLINIC IN A TERTIARY CARE
CENTRE IN SOUTH INDIA: A DESCRIPTIVE STUDY**



**A dissertation submitted in partial fulfillment of the rules and
regulations for MD General Medicine examination of the Tamil
Nadu Dr. M.G.R Medical University, Chennai, to be held in May**

2018

DECLARATION

This is to declare that the dissertation titled “Clinical profile of patients attending the Obstetric Medicine Clinic in a tertiary care centre in South India: A descriptive study” which is submitted by me in partial fulfillment towards M.D General Medicine degree Examination of the Dr. M.G.R. University, Chennai to be held in May 2018 comprises only my original work and due acknowledgements has been made in text to all materials used.

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This is to certify that the dissertation "Clinical profile of patients attending the Obstetric Medicine Clinic in a tertiary care centre in South India: A descriptive study" is a bonafide work of Dr. Dan Mathew Luke carried out under my guidance towards the partial fulfillment of the rules and regulations for M.D. General Medicine degree Examination of the Tamil Nadu Dr. M.G.R. University, Chennai to be held in 2018.

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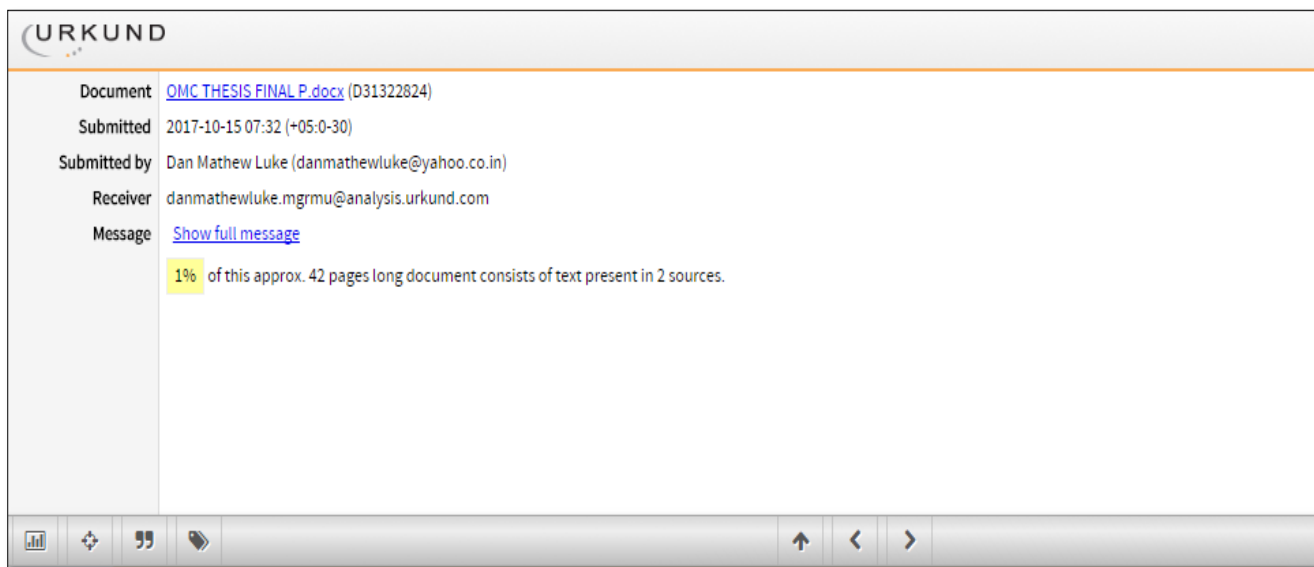
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ACKNOWLEDGEMENT

I would like to express my heartfelt and sincere gratitude to my teacher and guide Dr. Sowmya Sathyendra for her continuous support, valuable suggestion, meticulous guidance and encouragement in doing this study.

I would also like to thank Dr. Sudha Jasmine, Dr. Anand Zachariah, Dr. O.C. Abraham, Dr. Thambu David, Dr. Ramya I, Dr. Alice Joan Mathuram and the entire department of Medicine for their insightful comment and encouragement in doing this dissertation and throughout my three year course.

I am also indebted to the department of Clinical Epidemiology, and our biostatistician Ms. Tunny Sebastian for her patience and understanding.

I am forever grateful to all the patients who agreed to be part of this study.

Lastly, I would like to thank God, my family, especially my wife Dr. Rebecca, without whom this would not have been possible.

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INTRODUCTION

Maternal and child morbidity and mortality directly due to pregnancy, child birth and the immediate postpartum have reduced due to improved obstetric care. From 1990 to 2015, the global maternal mortality ratio declined by 44 per cent – from 385 deaths to 216 deaths per 100,000 live births, according to UN interagency estimates. This translates into an average annual rate of reduction of 2.3 per cent. While impressive, this is less than half the 5.5 per cent annual rate needed to achieve the three-quarters reduction in maternal mortality which was targeted for 2015 in Millennium Development Goal. ^[1, 2]

An estimated 800 women die every day from pregnancy and pregnancy related complications worldwide. Maternal deaths, which have been described, are only the tip of the iceberg. For every woman who dies of pregnancy related causes, upto thirty others experience acute or chronic morbidity, often with permanent sequelae that affect their ability to function normally. Totally 99% of these maternal deaths and complications occur in developing countries and most are avoidable. Half of those deaths are due to medical causes. Like the obstetric population in high resourced settings, women of childbearing age in developing countries are increasingly overweight or obese and have preexisting medical conditions. This trend is in keeping with that seen in the Global Burden of Disease (GBD) 2010 which identified that these demographic changes are driving up premature deaths and disability from non-communicable diseases (mainly cardiovascular and respiratory diseases, cancer and diabetes). ^[3]

The very birth of Obstetric Medicine is the response of the times to meet to this exigency. My study aims at learning the importance of Obstetric Medicine as seen from the perspective of a tertiary referral hospital in South India, namely Tamil Nadu. This requires a detailed assessment of the clinical profile and maternal and fetal outcomes of patients being referred to the Obstetric Medicine clinic. The patients who are seen in this clinic are mostly from the near districts and do not even represent the state as a whole. However, it is a pointer towards the need for a centrally sponsored comprehensive Government of India project for a more inclusive discerning study. Direct and indirect causes of maternal morbidity and mortality in different geographical, economic and social regions of this vast country have to be done to create a data base for future targeted medical intervention.

AIM

To study the clinical profile and maternal and foetal outcomes of patients attending the Obstetric Medicine clinic in a tertiary care centre in South India

OBJECTIVES

- A. To study the common reasons for referral to the Obstetric Medicine Clinic
- B. To ascertain the frequency of common medical disorders in pregnancy
- C. To determine the correlation between age and frequency of medical disorders
- D. To study the maternal and foetal outcomes of patients referred to the Obstetric Medicine Clinic

REVIEW OF LITERATURE

MATERNAL MORBIDITY AND MORTALITY

GLOBAL SCENARIO

Globally, the nature of maternal mortality and morbidity is shifting from direct obstetric causes to an increasing proportion of indirect causes due to chronic conditions and ageing of the maternal population. Obstetric medicine can address an important gap in the care of women by broadening its scope to include medical colleges, communities and countries that do not yet have established obstetric medicine training, education and resources. Between 2003 and 2009, hemorrhage, hypertensive disorders and sepsis were responsible for more than half of maternal deaths worldwide (Figure 1). More than a quarter of deaths were attributable to indirect causes. These analyses should inform the prioritisation of health policies, programs, and funding to reduce maternal deaths at regional and global levels.^[4] Non-communicable diseases in pregnancy are becoming increasingly important in contributing to death and poor health. Changes in the patterns and distribution of these conditions mean that we need new perspectives and ways of dealing with these challenges for the future like setting up of Obstetric Medicine clinic.^[5]

The UK confidential enquiry into maternal deaths identified poor management of medical problems in pregnancy to be a contributory factor to a large proportion of indirect maternal deaths. Maternal (obstetric) medicine is an exciting subspecialty that

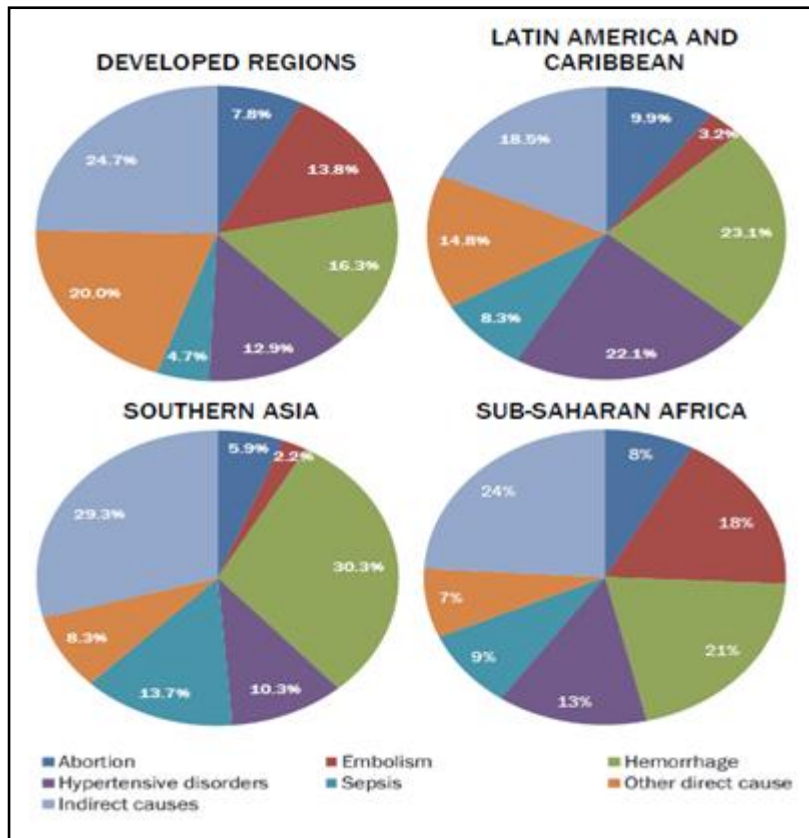
encompasses caring for both women with preexisting medical conditions who become pregnant, as well as those who develop medical conditions in pregnancy. Physician training has limited exposure to medical problems in pregnancy. Therefore the role of the obstetric physician is to ensure that physicians with adequate expertise attend joint physician–obstetrician clinics.^[6]

The leading direct causes of the estimated 196 maternal deaths per 100,000 live births globally are postpartum hemorrhage, the hypertensive disorders of pregnancy, obstructed labour, unsafe abortion and obstetric sepsis. Of the Sustainable Development Goals, one (Sustainable Development Goal 3.1) specifically addresses maternal mortality; by 2030, the goal is to reduce the global maternal mortality ratio to less than 70 per 100,000 live births.^[7] Previous data indicate the need for a call to action for adequate diagnosis and care of medical diseases in obstetric care.

Torres and his colleagues, in a study in Mexico, applied a new method to data from an eight-year study period, and found that maternal deaths from direct obstetric causes declined from 46.4 to 32.1 per 100,000 live births during the study period and that maternal deaths from indirect causes remained steady with 12.2 deaths per 100,000 live births in 2006 compared with 13.3 deaths per 100,000 live births in 2013.^[14]

Menendez et al. in their 2008 study of the causes of maternal mortality in a tertiary hospital in Mozambique found that infectious diseases such as HIV/AIDS, pneumonia, malaria and meningitis accounted for at least half of all maternal deaths.^[15]

Figure 1: Estimated distribution of causes of maternal mortality by region, 2003-2009

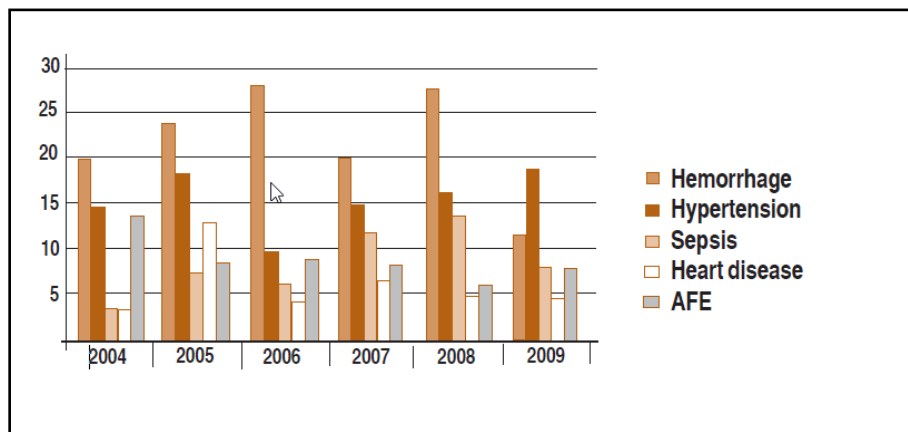


Adapted from Global causes of maternal death: a WHO systematic analysis. The Lancet Global Health 2014 June 2(6), e323-e333

INDIAN SCENARIO

The leading causes of maternal deaths identified during the period 2004-09 by the Confidential Review of Maternal Deaths (CRMD) in Kerala were hemorrhage, hypertension, amniotic fluid embolism, heart disease and sepsis (Figure 2).^[8]

Figure 2: Percentage contribution to the maternal deaths



Adapted from Kerala Federation of Obstetrics and Gynecology (KFOG). Second report of confidential review of maternal deaths, Kerala. Why Mothers Die, Kerala 2006–2009. Kerala: KFOG, 2012. (AFE: Amniotic fluid embolism)

As per the maternal death review report analysis of India, the causes of maternal mortality are hematological (26%), hypertensive disorders (12%), sepsis (8%), obstructed labour (3%), abortion (2%) and others(49%).^[9] Between 2003 and 2012, records of maternal death cases in the Christian Medical College, Vellore were retrospectively reviewed. It was found that 32.53% of maternal deaths were because of some type of infection as the primary cause. In this study, metritis with pelvic cellulitis, septic abortions, tuberculosis, malaria, scrub typhus and H1N1 influenza (influenza A virus subtype) were among the most commonly encountered causes of maternal death due to infections (Table 1). Control of these diverse community-acquired infections holds the key to a reduction in maternal mortality along with the promotion of clean birthing practices.^[10]

Table 1: Infectious causes of maternal mortality

Infection	No. (%)
Pregnancy-related infection	34 (16.03%)
Metritis with pelvic cellulitis	25 (11.79%)
Necrotizing fasciitis	1 (0.47%)
Chorioamnionitis	1 (0.47%)
Septic abortion	7 (3.3%)
Pregnancy-unrelated/Incidental infection	35 (16.50%)
Tuberculosis	10 (4.7%)
H1N1 influenza	6 (2.8%)
Scrub typhus	6 (2.8%)
Malaria	6 (2.8%)
Dengue hemorrhagic fever	3 (1.40%)
Typhoid	1 (0.47%)
Herpes zoster	1 (0.47%)
HIV with <i>Pneumocystis carinii</i> pneumonia	1 (0.47%)
Orbital cellulitis	1 (0.47%)
Hospital-acquired infection	15 (7.07%)
Ventilator-acquired pneumonia	15 (7.07%)
Total	84 (39.62%)

Adapted from Journal of Turkish German Gynecological Assoc. 2015;16(4):208-213.

Dedicated Obstetric Medicine (OM) units can aid in the management of varied maternal morbidity and prevent adverse maternal and fetal outcomes. In an unpublished study from Christian Medical College for a period of 1 year from July 2015 to June 2016 studying the clinical profiles of patients treated under an Obstetric Medicine Unit, the outpatient consultations were for infections (28%), gestational

diabetes mellitus (17%), hypertension (16%), thyroid disorders (12%) and others were for evaluation of dyspnea, palpitation, anemia, connective tissue disorder, hepatitis and seizure disorder.^[11]

There continues to be a large disparity between the maternal mortality in developed compared with that of developing nations.^[12] In India, the mortality in the urban centers differ from that in the rural regions. Based on 2004-2006 SRS(Sample registration system) national Maternal mortality rate (MMR) estimates of 254 deaths per 100,000 live births, the estimated rural areas of poorer states had the highest MMR of 397 compared to the lowest MMR of 115 in urban areas of richer states .^[13]

The complications leading to maternal death can occur without warning at any time during pregnancy and childbirth. Most maternal deaths can be prevented if births are attended by skilled health personnel who are regularly supervised, have the proper equipment and supplies and can refer women in a timely manner to emergency obstetric care when complications are diagnosed. Complications require prompt access to quality obstetric services equipped with lifesaving drugs, including antibiotics, and the ability to provide blood transfusions needed to perform caesarean sections or other surgical interventions.

Coexistent medical illness is an important contributor to morbidity and mortality. A WHO study on trends in maternal mortality showed that the risk that non-communicable diseases could undermine recent progress in improving maternal survival. Indirect maternal deaths result from an often preexisting disease made worse by pregnancy and include non-communicable conditions, such as type 2 diabetes and

cardiovascular disorders, as well as infectious and parasitic diseases such as HIV infection, tuberculosis or hepatitis.^[2]

Information regarding the role of infectious and non-communicable disease in pregnancy in India remains largely unknown as mass surveys to this regard are few and patchy in its existence. India accounts for more than 20% of the global maternal and child deaths. The causes of maternal deaths have been classified according to major groups in the ICD10 classification of diseases. Quantitative estimates of causes were made from the translated sub categories of ICD code. A total of 26 maternal deaths were reported from Assam, 73 from Bihar, 7 from Maharashtra, 36 from Rajasthan and 29 from Tamil Nadu during the year 2003. Distribution of causes of maternal deaths shows that, conditions pertaining to pregnancy, childbirth and puerperium were the leading causes of maternal mortality in Bihar (40%), Maharashtra (100%) and Rajasthan (79%). In Assam, diseases of circulatory system and diseases of digestive system were the most common causes of maternal mortality accounting for about half of the total maternal deaths followed by external causes of morbidity and mortality (21%) and certain infectious and parasitic diseases (18%).

Diseases of circulatory system were the most common causes of deaths in Tamil Nadu leading to 27% of maternal deaths followed by infectious and parasitic diseases (17%), injury, poisoning and certain other consequences of other causes (15%) and neoplasms (11%). In Bihar, the other important causes of maternal deaths were deaths due to diseases of blood and blood forming organs (14%), certain infectious and parasitic diseases (15%), deaths due to symptoms, signs and abnormal clinical and

laboratory findings, not classified elsewhere (11%), deaths by injury, poisoning and external causes of morbidity and mortality (8% together) and disease of genitourinary system (4%). In Rajasthan, the second most important cause of maternal death after cause related to pregnancy, childbirths and puerperium were disease of blood and blood forming organs (8%), deaths due to certain infectious and parasitic diseases (5%), deaths due to symptoms, signs and abnormal clinical and laboratory findings, not classified elsewhere (3%), external causes of morbidity and mortality (3%) and disease of circulatory system (2%). Conditions during pregnancy, childbirth and puerperium were the single cause of maternal death in Maharashtra.^[16]

The medical diseases that coexist, precipitated or exacerbated by pregnancy, are important determinants of maternal and fetal mortality and morbidity. Diseases can exist in isolation or in combination requiring careful and astute management for improving the maternal and child health during and immediately after pregnancy. Obstetric Medicine in its evolved state and widespread implementation may have long term implications in health of the subjects involved.

SCOPE OF OBSTETRIC MEDICINE

MATERNAL NUTRITION

The metaanalysis of nutritional intervention studies with balanced protein energy supplementation during pregnancy shows a 34% and 38% risk reduction for small for

gestational age (SGA) babies and stillbirths respectively.^[17] Nutritional iron deficiency anemia is the most common cause of anemia and is associated with increased maternal and perinatal morbidity and mortality, and long term adverse effects in the newborn.^[18] Studies show a significantly higher risk of LBW and preterm birth with anemia in the first or second trimester. Iron supplementation during pregnancy significantly lowers the incidence of LBW but has no effect on the incidence of preterm or SGA birth.^[19,20] Recent systematic review and meta-analysis including some new studies concluded that vitamin D insufficiency is associated with an increased risk of gestational diabetes, preeclampsia and SGA and LBW infants.^[21] Low circulating levels of vitamin B12 in folate replete mothers are associated with ‘thin fat’ offspring and high prevalence of insulin resistance, indicating a future risk of type 2 diabetes.^[22]

OBESITY

Obesity is associated with an increased risk of preeclampsia, induction of labour, postpartum hemorrhage, intensive care admission, GDM, thrombosis, shoulder dystocia and caesarean section (C-section).^[31] It is also associated with maternal infection, prolonged hospital stay and instrumental delivery.^[23]

Obese women have a 3.5 fold increase in the rate of infection compared with women of an ideal BMI. Wound infections are common, and their rate increases with worsening obesity.^[24]

HYPERGLYCAEMIA IN PREGNANCY

Worldwide, one in six pregnancies may be associated with hyperglycemia, 84% of which involve GDM (Gestational Diabetes Mellitus).^[18] In 2013, 16.8% live births (21.4 of 127 million) were associated with hyperglycemia in pregnancy and 16% of these were due to overt diabetes in pregnancy. This does not account for pregnancies ending in spontaneous abortions, stillbirths or intrauterine deaths that may have been associated with hyperglycemia proven or otherwise. In high risk groups, up to 30% of pregnancies may involve diabetes.^[25, 26, 27]

A 2013 systematic review and metaanalysis of randomized trials for the US Preventive Services Task Force found that appropriate management of GDM resulted in reductions in preeclampsia (7.2% versus 11.7%), birth weight >4000 g and shoulder dystocia.^[28]

Macrosomia was more likely when GDM was present in the absence of obesity (14.4%) than when obesity was present in the absence of GDM (12.4%) and the independent effects of GDM and obesity were additive (21.7%).^[29]

In a 2012 systematic review of four randomized trials (n = 543 women) of women with one or more elevated glucose levels on a 100 g three hour oral glucose tolerance test who did not meet standard criteria for GDM, glucose monitoring and medical nutritional therapy (with or without insulin) resulted in a reduction in delivery of large for gestational age infants compared with usual care.^[30]

HYPERTENSION IN PREGNANCY

DEFINITION

Hypertension in pregnancy is defined as a blood pressure of greater than or equal to 140mmHg (systolic) or 90 mmHg (diastolic) on at least two measurements, ideally separated by a period of rest. Severe hypertension is defined as a blood pressure of greater than 160–170/110 mmHg. Systolic hypertension of greater than 180 mmHg is a medical emergency.^[32]

IMPACT OF HYPERTENSION ON PREGNANCY

Hypertensive disorders of pregnancy (HDP) complicate an estimated 3 to 10% of pregnancies and causes 30,000 maternal deaths annually. Approximately 30% of all maternal near miss events will be due to HDP with near miss events complicating about 420/100,000 deliveries. Of the estimated 2.6 million third trimester stillbirths annually, approximately 16% occur in pregnancies complicated by hypertension. Of particular importance to the global health community is the fact that 11% of stillbirths are associated with pregnancies complicated by chronic hypertension, while only 5% are associated with preeclampsia (presenting as either preeclampsia or eclampsia). It has been estimated that the hypertensive diseases precede 10% of early neonatal deaths (8/1000 live births) and a significant proportion of late neonatal deaths (3/1000 live births).^[33-38]

CLASSIFICATION OF HYPERTENSION IN PREGNANCY

Hypertensive disorders of pregnancy can be subclassified into four groups – chronic hypertension, gestational hypertension, preeclampsia and superimposed preeclampsia in the setting of chronic hypertension, as laid out in the ACOG (American Congress of Obstetricians and Gynecologists) guidelines.^[39]

The International Society for the Study of Hypertension in Pregnancy (ISSHP) has published guidelines on diagnosis to establish global unity of meaning in referring to the various hypertensive disorders of pregnancy, with the most recent guidance being released in 2014. They include an additional category of white coat hypertension.^[32]

Although each condition increases the risk of maternal and neonatal morbidity, the greatest risks are associated with a diagnosis of preeclampsia, either de novo or in the setting of chronic hypertension.^[40,41]

The diagnostic criteria for these disorders vary somewhat among published international guidelines, particularly between the research and clinical setting, in the discrimination between preeclampsia and gestational hypertension, and in setting the definition of severe preeclampsia.^[32,42-44]

HYPERTENSION IN PREGNANCY - CONTRIBUTION OF OBSTETRIC MEDICINE

SCREENING FOR PREECLAMPSIA

Preeclampsia is a serious disease and it is likely that early identification of those at risk would allow targeted surveillance and intervention, in order to improve the

pregnancy outcomes for both mother and fetus. Low dose aspirin started in the first trimester in high risk women may reduce the risk of preeclampsia by up to 50%^[45] and may improve associated fetal and maternal outcomes.^[46] No other agents tested (progesterone or Vitamins D and E) have shown a reduction in risk of preeclampsia.^[47] Calcium supplementation reduces the risk only in women who are deficient in dietary calcium.^[48] With the introduction of aspirin as a prophylactic agent there is a package of intervention – aspirin and increased ultrasound and blood pressure monitoring – that can reduce the risk of preeclampsia and increase the chances of early detection in women determined to be at high risk (Table 2).

Table 2: Maternal risk factors for preeclampsia (NICE, WHO, ACOG and SOGC)

NICE (2010)*	WHO (2011)	ACOG (2013)	SOGC (2014)*
Previous HDP	Previous preeclampsia	Previous preeclampsia	Previous preeclampsia
Chronic kidney disease	Renal disease	Chronic renal disease	Preexisting renal disease
Autoimmune disease (SLE/APS)	Autoimmune disease	SLE	APS
Type 1 or type 2 diabetes	Preexisting diabetes mellitus	Preexisting diabetes mellitus	Preexisting diabetes mellitus
Chronic hypertension	Chronic hypertension	Chronic hypertension	Preexisting hypertension
Multiple pregnancy	Multiple pregnancy	Multiple pregnancy	Multiple pregnancy
Nulliparity		Primiparity	Nulliparity
Maternal age ≥ 40 years		Maternal age ≥ 40 years	Maternal age ≥ 40 years
Interpregnancy interval ≥ 10			Interpregnancy interval ≥ 10
BMI ≥ 35 kg/m ² at booking		Obesity	Overweight/Obesity

Family h/o preeclampsia		Family h/o preeclampsia	Family h/o preeclampsia
			Family h/o early onset cardiovascular disease
			Lower maternal birthweight and/or preterm delivery
		History of thrombophilia	Heritable thrombophilias
			↑ pre-pregnancy triglycerides
			Nonsmoking
			Cocaine, methamphetamine
			Previous miscarriage at ≤10 weeks with same partner
			New partner
			Short duration of sexual relationship with current partner
		In vitro fertilization	Reproductive technologies
			SBP ≥130 or DBP ≥80 mmHg at booking
			Vaginal bleeding in early pregnancy
			Gestational trophoblastic disease

Adapted from Integrated Blood Pressure Control 2016:9 79–94 Current best practice in the management of hypertensive disorders in pregnancy

*Women are at increased risk if they have one of the risk factors in bold or ≥2 of the other risk factors

ASTHMA IN PREGNANCY

Asthma has been described as a potentially serious medical problem that occurs during pregnancy and is seen in approximately 8% of pregnant women.^[49]

Women with asthma have been reported to have higher risks of several complications of pregnancy which includes intrauterine growth restriction, preeclampsia, preterm birth, infants with low birth weight or infants with congenital malformations and perinatal death than women without a history of asthma.^[50-58] There is a strong association between poor asthma control during pregnancy and increased risks.^[59-63] Treatment also may reduce serious risks to the mother resulting from uncontrolled asthma, including death. Potential adverse effects of medications on the foetus have to be kept in mind while treating asthma in pregnancy. The course of asthma may improve, worsen, or remain unchanged during pregnancy.^[64,65]

PNEUMONIA IN PREGNANCY

Community acquired pneumonia (CAP) carries substantial morbidity and mortality particularly so in young adults.^[66] In the pregnant patient, pneumonia is the most frequent cause of fatal non-obstetric infection.^[67]

CHANGES THAT MAY PREDISPOSE A PREGNANT WOMAN TO COMMUNITY ACQUIRED PNEUMONIA

Changes in cellular immunity - This include decreased lymphocyte proliferative response, especially in the second and third trimesters, decreased natural killer cell activity, changes in T cell populations with a decrease in numbers of circulating helper T cells, reduced lymphocyte cytotoxic activity, and production by the trophoblast of substances that could block maternal recognition of fetal major histocompatibility antigens.^[68-72]

Hormonal changes during pregnancy - including progesterone, human chorionic gonadotropin, alpha-fetoprotein and cortisol - may inhibit cell mediated immune function.^[71]

Anatomical alterations - The enlarging uterus causes elevation of the diaphragm by up to 4 cm and splaying of the thoracic cage. A 2.1 cm increase in the transverse diameter of the chest and a 5 to 7 cm increase in the circumference of the thoracic cage has been reported.^[73] These changes may decrease the mother's ability to clear secretions. The decrease in functional residual capacity, increase in oxygen consumption, and increase in lung water that occur during pregnancy add to the vulnerability of the lung to injury from infection.

Obstetric and anaesthetic interventions, including endotracheal intubation, pose further risks, not least from aspiration pneumonia.^[74]

INCIDENCE

A very high incidence was reported in the years before 1965 ranging from 6.3 per 1000 deliveries to 8.5 per 1000 deliveries.^[75,76] This had decreased in the 1970s and early 1980s to 0.44 to 0.78 per 1000 deliveries, presumably due to the introduction of antibiotics and improvements in obstetric care.^[77,78]

More recently, an incidence of 1.2 to 2.7 per 1000 deliveries has been reported.^[79-81] It has been proposed that this increase in incidence is a reflection of the higher proportion of pregnant women with chronic medical conditions.^[79]

MORTALITY

Pneumonia is the third most frequent cause of indirect obstetric death in North America.^[82] The reported maternal mortality of 0 to 4% in recent studies, approximates the mortality from CAP in hospitalised non-pregnant adults.^[83,84] Mortality from pneumonia in pregnancy is similar to rates in nonpregnant adults.

FETAL OUTCOME

Mothers with pneumonia are significantly more likely to deliver before 34 weeks gestation, with preterm delivery occurring in up to 43% of cases.^[85] Infants born to mothers with pneumonia weigh significantly less.^[85] One study found a difference of 150 g in the birth weight of infants born to mothers with pneumonia compared with controls.^[81] The frequency of low birth weight infants (2500 g or less) was higher in cases than in controls (16% v 8%).

BACTERIAL AND ATYPICAL PATHOGENS

Streptococcus pneumoniae is the most common organism identified, followed by *Haemophilus influenzae*. Infection with *Legionella* species has been documented but is rare. Treatment with erythromycin has proved successful.^[86] *Mycoplasma pneumoniae* might be expected to be more common, particularly in this age group. Human infection with *Coxiella burnetii* (Q fever) results mainly from aerosols which are generated by farm animals (Table 3).

Table 3: Pathogens implicated in pneumonia during pregnancy: from four studies

Pathogen	N=161 (%)
<i>Streptococcus pneumoniae</i>	28 (17%)
<i>Haemophilus influenzae</i>	9 (5.5%)
<i>Mycoplasma pneumoniae</i>	5 (3%)
<i>Legionella</i> sp	2 (1.2%)
<i>Staphylococcus aureus</i>	2 (1.2%)
Influenza A virus	2 (1.2%)
Others	14 (9%)
Unknown	99 (61%)

Adapted from W S Lim, J T Macfarlane, C L Colthorpe .Pneumonia and pregnancy. Thorax 2001;56:398–405

INFLUENZA VIRUS

There are three antigenically distinct types of influenza myxoviruses that cause human disease: type A, B and C. Type A is usually associated with epidemic disease and, historically, has been implicated in causing severe disease in pregnant patients.

Mortality was highest in women in the third trimester.^[87] Post mortem studies showed that pregnant women most commonly died from fulminant primary viral pneumonia

whereas non pregnant patients died from secondary bacterial infection.^[88] Influenza A virus can pass through the placenta.^[89] Whether influenza can cause congenital malformations is under debate. Circulatory defects and central nervous system malformations have been described.

Pramanick A, Peter J V et al in 2009, conducted a retrospective cross sectional study on 566 women (79 pregnant/puerperal, 487 nonpregnant) who presented to a tertiary care hospital with influenza-like illness. In the pregnant/puerperal cohort, factors associated with death included delayed presentation, need for ICU admission, need for ventilation and renal failure. The perinatal mortality rate was 55.5/1000 births compared with 33.5/1000 births in the hospital overall during the study period.^[90]

IMPACT OF HIV INFECTION

It was difficult to obtain data on HIV related lung infections in the pregnant patient. However, data is available for general patients. Whether this can be extrapolated to those who are pregnant remains to be seen. Bacterial infections are the most common respiratory complications in patients with HIV infection.^[91]

In the cohort studied in the Pulmonary Complications of HIV Infection Study, the incidence of bacterial pneumonia was 5.5 per 100 person years compared with a rate of 5.1 per 100 person years for *Pneumocystis carinii* pneumonia (PCP).^[92] Others have reported a bacterial pneumonia rate of up to 12.5 per 100 person years, significantly higher than in HIV negative patients.^[93, 94]

The CD4+ lymphocyte count is strongly associated with the occurrence of both PCP and bacterial pneumonia, with infection becoming increasingly likely at CD4+ lymphocyte counts below 500/mm³.^[94] Bacteraemia rates of about 30% are not uncommon in HIV positive patients.^[92,95] Generally, *S. pneumoniae* is the most common organism identified, although a recent series found *P. aeruginosa* to be more common.^[95]

TUBERCULOSIS IN PREGNANCY

In 2012, an estimated 2.9 million women had tuberculous illness (TB) and 410,000 women died. Of the TB deaths in HIV infected individuals, 50% were in women. The African and Southeast Asian regions accounted for 68% of the TB cases in women, and almost 90% of the TB deaths in women were in Africa. More than half of the estimated TB cases in women went undetected compared to less than 40% in the general population. Coinfection with HIV worsens outcomes, and it is estimated that TB in pregnant women living with HIV increases the maternal and infant mortality by almost 300%, an especially significant public health issue in areas of high TB prevalence. Pregnant patients appear more likely to have unilateral, noncavitary, smear negative disease.

Risk factors in pregnancy that should prompt screening for TB include HIV infection, close contact with a person known or suspected to have active TB and medical risk factors known to increase the risk of disease if infected (such as diabetes

or immunosuppression). The other risk factors are medically underserved status, low income, alcohol addiction, intravenous drug addiction, residency in a long-term care facility (e.g. correctional institutions or mental health institutions), homelessness, health professionals working in a high risk health care facility and birth in or emigration from a country with high TB prevalence.^[96, 97]

SEPSIS IN PREGNANCY

DEFINITION

Puerperal sepsis is defined as ‘infection of the genital tract occurring at any time between the rupture of membranes or labour, and the 42nd day postpartum, of which two or more of the following are present: pelvic pain, fever $\geq 38.5^{\circ}$ C, abnormal vaginal discharge, abnormal smell of discharge, and delay in the rate of reduction of size of uterus (less than 2 cm a day during the first 8 days).

ETIOLOGY

In the 2006–2008, Confidential Enquiries into Maternal Deaths, Lancefield classification Group A *Streptococcus* (GAS) or *Streptococcus pyogenes* was a significant cause of maternal death. Obstetric interventions, obesity, maternal age over 35 years, artificial reproduction and multiple pregnancies and low socioeconomic status are risk factors. It was reported that 13 out of the 29 maternal deaths were caused by GAS. In a study on maternal mortality in the Netherlands, GAS accounted for 42.9% (9 out of 21) of direct maternal deaths from sepsis and 31.8% (14 out of 44)

of cases of maternal morbidity from sepsis. The reported case fatality rate for GAS was 14.3%. About 5 to 30% of the population are thought to be asymptomatic carriers.^[98-101]

Obese women have a 3.5 fold increase in the rate of infection compared with women of an ideal BMI. Wound infections are common, and their rate increases with worsening obesity. Caesarean section carries a five to 20 fold increased risk of infectious morbidity compared with vaginal birth. Wound infections, urinary tract infections, pyelonephritis, respiratory tract infections and mastitis are common. Emergency caesarean section, prolonged rupture of membranes over 18 h, increased intrapartum vaginal examinations (e.g. over 7) and absence of antibiotic prophylaxis further increase risks.^[102-110]

THYROID DISEASE IN PREGNANCY

INTRODUCTION

Thyroid disorders are common in pregnancy and related to maternal and fetal complications. Hyperthyroidism is seen in 0.1 to 0.4% of pregnant women.

Approximately 2 to 3% of pregnant women are hypothyroid during pregnancy, 0.3 to 0.5% have manifest hypothyroidism, 2 to 2.5% exhibit subclinical

hypothyroidism.^[111] About 5 to 10% of women are positive for thyroid antibodies.

These patients have an increased risk of developing thyroid insufficiency during pregnancy.^[112]

Subclinical hyperthyroidism is not associated with adverse outcomes. Autoimmune thyroid disease appears to be associated with an increased risk of miscarriage and preterm delivery.^[113]

PHYSIOLOGY OF MATERNAL AND FETAL THYROID IN PREGNANCY

The thyroid undergoes physiological enlargement with increase in vascularisation. Beta-human chorionic gonadotropin (β hCG) causes thyroid stimulation as there is structural analogy with thyroid stimulating hormone (TSH), during the first trimester.^[114] Pregnant women therefore have lower serum TSH concentrations than non-pregnant women.^[115]

Estrogen stimulation increase circulating levels of thyroid binding globulin (TBG) by increasing hepatic synthesis. Iodine availability is reduced because of increased maternal renal clearance, fetal intake and placental metabolism.^[116] In addition, estrogen prolongs the half life of TBG from 15 minutes to 3 days, a few weeks after conception and this level out by mid-gestation.^[117]

In early pregnancy following the rise in TBG, total concentrations of thyroxine (T4) and of triiodothyronine (T3) increase by 30 to 100% greater than pre pregnancy, and plateau early in the second trimester. Changes in free hormone during pregnancy are controversial, though pregnant women in general have lower free hormone concentrations at term than nonpregnant women.^[118,119]

Fetal thyroid begins concentrating iodine and synthesising thyroid hormones after 12 weeks of gestation; before this time any need of thyroid hormones is supplied by

maternal reserves, in order to promote the physiological fetal brain development.^[120,121]

HYPOTHYROIDISM

Hypothyroidism occurs in 2.5% of pregnancies;^[122,123] however, the frequency of overt hypothyroidism is thought to be between 0.2 and 1.0%.^[124,125] Hypothyroidism is defined as high TSH with a low FT4 level.

Iodine deficiency is the most common cause. In areas where iodine intake is sufficient the frequent cause is autoimmune thyroiditis. Other causes are previous thyroidectomy, radioiodine therapy, the use of drugs, congenital hypothyroidism, pituitary or hypothalamic disease and immunoglobulin binding to the TSH receptor, blocking its activity.

Haddow et al. in 1999 described reduced intelligence quotient (IQ) in babies born from hypothyroid mothers. This retrospective study corroborates the association between hypothyroidism and increase risk of impaired neurodevelopment in the offspring.^[126] Symptoms of hypothyroidism can often be masked by the hypermetabolic state of pregnancy.

Gestational hypertension, placental abruption and postpartum haemorrhage have been shown to be increased in some, but not all, studies. The other obstetrical complications are increased risk of spontaneous miscarriage, stillbirth, perinatal death, preterm delivery, fetal distress and increased frequency of low birth weight infants.^[127-129,112]

Abalovich et al. in 2002 showed that levothyroxine (LT4) treatment prevented fetal loss. Fetal loss was 4% in the adequately treated group versus 31% in inadequately treated group.^[130] There was no increase in reported obstetrical and neonatal complications in treated hypothyroid women in a study by Tan et al. in 2006.^[131] Negro et al. confirmed this in his study in 2010 in which adverse events were noted in women with subclinical and overt hypothyroidism. Untreated thyroid dysfunction patients had a significantly higher rate of complications compared with those receiving treatment.^[132]

SUBCLINICAL HYPOTHYROIDISM

Subclinical hypothyroidism (SH) is the most frequent thyroid disease occurring in pregnancy.^[116,124,125] Subclinical hypothyroidism is defined as a normal FT4 levels with high TSH. The prevalence of SH varies between 1.5 and 4.0%.^[123] SH causes several obstetrical complications.^[112,116]

Allan et al. in 2000, observed that TSH levels greater than 6.0 mIU/L during pregnancy was associated with a higher rate of fetal death than controls (3.8% vs 0.9%).^[122] Benhadi et al. in 2009, found a correlation between pregnancy loss and increased TSH values. In this study the incidence of child loss increased by 60% for every doubling in TSH concentration.^[133]

Cleary-Goldman et al. in 2008 and Männistö et al. in 2009 showed that maternal and fetal complications were associated with autoimmunity,^[134] independent from thyroid function.^[135] Negro et al. in 2010 showed that in the first trimester women with TSH

level between 2.5 and 5.0 mIU/L, had an increased rate of pregnancy loss of 6.1 vs 3.6% respectively, compared with those having TSH levels less than 2.5 mIU/L.^[132]

THYROID AUTOIMMUNITY

Thyroid antibodies positivity is the most common autoimmune disorder during pregnancy and is seen in around 10% of women of childbearing age.

Stagnaro-Green et al. in 1990 showed an association between pregnancy loss and thyroid antibodies. The course of 550 pregnancies were followed up and they found that patients who were positive for Thyroglobulin antibodies (TgAb) or TPOAb had a 2 fold increase in the risk of pregnancy loss (17% vs 8.4%).^[136] A metaanalysis in 2011 including 12,126 patients, found that women with thyroid antibodies had a 4 fold increased risk of miscarriage. There was a 1.8 fold increased risk according to case control studies.^[137]

Glinioer et al. published the association of autoimmune disease and preterm birth.^[128] Ghafoor et al. found that women with thyroid antibodies have a 4 fold risk of preterm delivery.^[138] In a larger study by Haddow et al, involving about 10,000 patients, a weak association with preterm delivery was demonstrated.^[139] Iijima et al. did not find a significant association.^[140]

Negro et al. in 2006 studied 984 patients in the first trimester of pregnancy. There were 11.7% patients with thyroid autoimmunity. They were divided into two groups, one of which was treated with levothyroxine.^[141] Results showed a significantly decreased rate of pregnancy loss (3.5% vs 13.8%) and a lower rate of preterm delivery in the treated group than the untreated group (22.4% vs 7%).

The use of IVIG for the prevention of recurrent pregnancy loss, in women with thyroid antibodies were done in several small nonrandomized studies.^[142- 144] The data on the use of levothyroxine or IVIG to prevent miscarriage rate are preliminary. One study showed an improvement in live birth compared with the control group (92% vs 0%), and in another comparing levothyroxine with IVIG, there was a higher rate of term delivery in the group treated with levothyroxine.

HYPERTHYROIDISM

The normal physiological changes of pregnancy can hide some of the signs and symptoms of hyperthyroidism. Hyperthyroidism is less common than hypothyroidism and is seen in around 0.2% of pregnancies. It is defined as an excessive production of thyroid hormones caused by immune or non immune thyroid disease.

Thyrotoxicosis at conception increases the risk for spontaneous abortion. Severe hyperthyroidism during pregnancy is associated with stillbirth, preterm delivery, intrauterine growth restriction, preeclampsia and heart failure.^[145]

SUBCLINICAL HYPERTHYROIDISM

Subclinical hyperthyroidism affects upto 1.7% of pregnant women and is defined as a serum TSH concentration below the lower limit of reference range, with FT4 and FT3 concentrations within normal reference range.

Subclinical hyperthyroidism in pregnancy has not been found to be associated with adverse outcomes.^[116]

SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) IN PREGNANCY

INTRODUCTION

Fertility in SLE patients does not appear to be altered by disease itself; however, a decrease in ovarian reserve can occur in women exposed to cyclophosphamide. Active SLE at the time of conception is a strong predictor of adverse maternal and obstetrical outcomes. The largest observational study, including 385 pregnant lupus patients with inactive or mild or moderate disease at conception, found 81 percent of subjects had uncomplicated pregnancies. A study of 267 pregnancies in a cohort of lupus patients found that women with high disease activity compared with low disease activity in the first and second trimesters showed a threefold increase in pregnancy loss (miscarriages and perinatal mortality).^[146-149]

Table 4 : Specific laboratory testing of SLE

No.	Investigation
1.	aPLs: Lupus anticoagulant (LA), immunoglobulin G (IgG) and IgM anticardiolipin (aCL) antibodies, and IgG and IgM anti-beta 2 glycoprotein (GP) 1 antibodies
2	Anti-Ro/SSA and anti-La/SSB antibodies
3.	Renal function (creatinine, urinalysis with urine sediment, spot urine protein/creatinine ratio)
4.	Complete blood count (CBC)
5.	Liver function tests
6.	Anti-double-stranded deoxyribonucleic acid (dsDNA) antibodies
7.	Complement (CH50, or C3 and C4)
8.	Uric acid

USE OF DISEASE MODIFYING DRUGS IN PREGNANCY

The use of NSAIDs in the third trimester may cause premature closure of the ductus arteriosus as well as other complications, and should be avoided during that time. Low dose aspirin can be safely used in pregnancy and is often indicated to reduce the risk of preeclampsia. Hydroxychloroquine (HCQ) should be continued during pregnancy in all patients with SLE, unless otherwise contraindicated. Several studies have demonstrated fewer disease flares and better outcomes in patients continuing HCQ during pregnancy, with no increase in adverse events or congenital malformations. Additionally, some data suggest a decrease in occurrence of congenital heart block in at risk fetuses of mothers with anti-Ro/SSA and anti-LA/SSB antibodies exposed to HCQ.^[150-157]

COMPLICATIONS DURING PREGNANCY

Pregnancy and the postpartum period are associated with a higher rate of SLE disease flares, widely variable rates have been reported ranging from 25 to 60 percent.^[158,159]

The following factors are associated with an increased risk of SLE flare during pregnancy^[160-162]

1. Active disease during the six months prior to conception
2. A history of lupus nephritis
3. Discontinuation of HCQ

Pregnancy in the setting of SLE is associated with a higher risk of complications compared with healthy women. The largest study to evaluate maternal and pregnancy complications associated with SLE included 13,555 pregnancies. Women with SLE also had a two to four fold increased rate of obstetric complications including preterm labor, unplanned cesarean delivery, fetal growth restriction, preeclampsia and eclampsia. Patients with SLE also had a significantly higher risk of thrombosis, infection, thrombocytopenia, and transfusion.^[163]

Another study found that increased rates of hypertension during pregnancy, preterm delivery, unplanned cesarean delivery, postpartum hemorrhage and maternal venous thromboembolism were all more frequent in women with SLE compared with pregnancies of women without SLE.^[164]

ACQUIRED HEART DISEASE AND PREGNANCY

CARDIOVASCULAR PHYSIOLOGY IN PREGNANCY

Pregnancy is associated with several cardiocirculatory changes that can significantly impact underlying cardiac disease. These changes begin early in pregnancy (within the first five to eight weeks), reach their peak during the late second trimester and then remain relatively constant until delivery.^[165] The cardiac output rises 30 to 50 percent above baseline during normal pregnancy. The degree of change is acutely influenced

by posture, as the cardiac output is higher when the pregnant woman is in the left lateral decubitus position, particularly in the latter part of pregnancy. The increased cardiac output is the result of changes in three important factors that determine cardiac performance: preload is increased due to the associated rise in blood volume; afterload is reduced due to the decline in systemic vascular resistance; and the maternal heart rate rises by 15 to 20 beats/min.^[166-169]

COMPLICATIONS DURING PREGNANCY

To determine the risks and predictors of pregnancy related cardiac complications in women with heart disease, a retrospective study analysed outcomes of 221 women with heart disease who underwent 252 pregnancies (excluding miscarriages). The findings were then applied in a prospective study of 562 women with congenital or acquired cardiac disease or arrhythmias who had 617 pregnancies. The four predictors of cardiac events identified were:

- a) Poor functional class (New York Heart Association [NYHA] class II to IV) or cyanosis
- b) Previous cardiac event (eg, heart failure, transient ischemic attack, stroke) or arrhythmia
- c) Left heart obstruction (mitral valve area of $<2 \text{ cm}^2$, aortic valve area of $<1.5 \text{ cm}^2$, peak left ventricular outflow gradient $>30 \text{ mmHg}$)
- d) Left ventricular systolic dysfunction (left ventricular ejection fraction $<40\%$).^[170,171]

The actual rate of primary cardiac events (pulmonary edema, arrhythmia requiring treatment, stroke, cardiac arrest or death) was 13 percent overall, with 55 percent occurring antepartum. There was excellent agreement between the rates that were predicted and observed by risk score: 0 point (5 vs 4 percent), 1 point (27 vs 26 percent), and more than 1 point (75 vs 62 percent). Women with scores of 0 and no lesion specific risk issues are at low cardiac risk and can often deliver safely in a community hospital setting.

Neonatal complications occurred in one third of women under age 20 or over age 35 who had obstetric risk factors, smoked or received anticoagulants and had a risk score of 1 or more; whereas the rate in matched controls without heart disease was 11 percent.^[172] In a study of pregnancy complicated by rheumatic heart disease, mitral stenosis, mitral regurgitation and aortic regurgitation accounted for 61%, 33% and 6% of cases, respectively.^[173]

PERIPARTUM CARDIOMYOPATHY

Peripartum cardiomyopathy (PPCM) is a type of dilated cardiomyopathy of unknown origin. Although the incidence is low- less than 0.1% of pregnancies- morbidity and mortality rates are high, ranging from 5% to 32%.^[174,175] The 2010 ESC Working Group defined PPCM as an idiopathic cardiomyopathy with the following characteristics:

- Development of heart failure toward the end of pregnancy or in the months following delivery

- Absence of another identifiable cause for the heart failure
- Left ventricular (LV) systolic dysfunction with an LV ejection fraction (LVEF) nearly always less than 45%. The left ventricle may or may not be dilated.^[176]

Several risk factors predispose a woman to PPCM, including increased maternal age, multiple gestation and a history of preeclampsia, eclampsia or postpartum hypertension.^[177-181] Prognosis of PPCM is positively related to the recovery of ventricular function.^[182]

JUSTIFICATION OF THE STUDY

Clinical Profile of Patients Attending the Obstetric Medicine Clinic in a Tertiary Care Centre in South India

Maternal mortality is one of the important health indicators of the country. Non-communicable diseases in pregnancy are becoming increasingly important in contributing to death and poor health. Early diagnosis and timely intervention can help reduce the maternal and fetal mortality and morbidity. An Obstetric physician can cater to the need for specialist management of medical disorders that complicate pregnancy.

It is therefore important to describe the clinical profile and maternal and fetal outcomes of patients being referred to the Obstetric Medicine clinic which is the main purpose of my study.

METHODOLOGY

SETTING

This is an observational, cross sectional study conducted in department of General Medicine at Christian Medical College Hospital, Vellore over a period of 11 months. All pregnant patients attending the Obstetric Medicine clinic, who newly register or are referred, from September 2016 to July 2017, are enrolled. Patients below the age of 18 years are excluded. Postpartum patients and nonpregnant patients who may also be referred to this clinic were excluded. The procedures of the study were explained in detail to the participants and their close relatives. Participants were included only after obtaining written consent from the patient directly on their first visit to the clinic. Consent was obtained in the participants' native language

STUDY DESIGN

This is a descriptive study done on pregnant patients who attend the Obstetric Medicine clinic. The historical cohort consists of patients who attend the clinic from September 2016 to March 2017. The prospective cohort consists of patients who attend the clinic from April 2017 to July 2017. The clinical profile and the maternal outcomes were studied. Those patients who delivered during the study period were followed up to determine the foetal outcome via telephonic interview.

PARTICIPANTS

Inclusion criteria

All pregnant patients who attend the Obstetric Medicine clinic are enrolled at their first visit.

Exclusion criteria

1. All patients below the age of 18 years as per hospital records were excluded.
2. Postnatal patients who may also be referred to this clinic were excluded.
3. Patients who refused an informed consent were excluded.

All consecutive patients meeting the required criteria were enrolled into the study thus minimising the chances of any selection bias.

Sample size

This is a descriptive study, includes all pregnant patients from September 2016 to July 2017 who attended the Obstetric Medicine clinic. The expected sample size is 480 based on records of prior patient attendance available over a 3 month period in Obstetric Medicine clinic, at Christian Medical College, Vellore.

Quantitative variables

- A. Age – <35 years and ≥ 35 years
- B. Weeks of gestation at presentation- < 12 weeks, 12-28 weeks, > 28 weeks
- C. Gravida, Parity, Living, Abortion/MTP
- D. Height, Weight
- E. BMI- underweight, normal, overweight, obese, morbid obesity
- F. Pulse
- G. Respiratory Rate
- H. Blood pressure-systolic/diastolic
- I. Gestational age at delivery: preterm which includes-extremely preterm <28 weeks, very preterm 28-32 weeks, late preterm 32-37 weeks, term ≥ 37 weeks, post term ≥ 42 weeks
- J. Birth weight: low birth weight < 2.5 kg, very low birth weight < 1.5 kg, extremely low birth weight < 1.0 kg

Qualitative variables

1. *Occupation of subject and spouse*: Professional/ semi-professional/ clerical, shop owner, farmer/ skilled worker/ semi-skilled worker/ unskilled worker/ unemployed
2. *Antenatal risk factors*: Gestational hypertension/ preeclampsia/ chronic hypertension/ gestational diabetes/ pregestational diabetes/ anaemia/ thyroid disorder -hypothyroidism, hyperthyroidism/ Rh negative/ liquor abnormality- oligohydramnios , polyhydramnios/ small for gestational age/ infertility/ multifetal pregnanc/ HIV positive /HBsAg positive/ polycystic ovarian syndrome/ vitamin B 12 deficiency
3. *Past obstetric history which includes*
 - Maternal complications
 - Prior gestational hypertension/ preeclampsia/ eclampsia/ GDM/ anaemia/ hypothyroidism/ hyperthyroidism/ oligohydramnios/ polyhydramnios / multiple pregnancy/ persistent trophoblastic disease/ abruption/ postpartum haemorrhage/ latent syphilis
 - Foetal complications
 - SGA/ preterm delivery/ big baby/ congenital heart disease/ other congenital anomalies/ developmental delay/ neonatal death/ still born/ MTP/ vesicular mole

4. *Reasons for referral:* Evaluation of anaemia/ control of blood pressure/ control of blood sugar/ evaluation of hypothyroidism/ evaluation of hyperthyroidism/ fever/ respiratory tract symptoms/ cardiac symptoms/ connective tissue symptoms/ musculoskeletal symptoms/ urinary tract symptoms/ neurological symptom/ seizures/ gastrointestinal symptoms/ dermatological symptoms/ renal symptoms/ easy fatigability/ hematological symptoms/ review after admission/ asymptomatic currently/expert opinion
5. *Duration of symptoms:* Acute/sub acute/chronic
6. *Past medical history:* Hypertension/ diabetes/ asthma/ hypothyroidism/ hyperthyroidism/ connective tissue disease/ seizure disorder/ tuberculosis/ heart disease/ orthopaedic disorder/ rheumatic fever/ Hansen's disease/ migraine/ renal disease/ psychiatric disease/ hematological disease/ pulmonary disease/ hepatobiliary disease/ neurological disease/ skin disease/ other past medical history
7. *Past gynecological surgery:* LSCS/ myomectomy/ adnexal cyst/ diagnostic laparoscopy
8. *Past general surgery:* Appendicectomy/ thyroidectomy/ tonsillectomy/ septoplasty/ hip replacement/ ERCP and stenting/ MVR/ excision of ICSOL incision and drainage / nasal polypectomy
9. *Significant drug history:* Antihypertensive/ eltroxin/ antibiotic/ bronchodilator/ metformin/ insulin/ steroid/ DMARDS/ vitamins/ ecospirin

10. *Family history* : Hypertension/ diabetes/ hypothyroidism/ asthma/ tuberculosis/ jaundice/ seizure/ cancer/ SLE
11. *Significant general examination finding* : Pallor/ icterus/ cyanosis/ clubbing/ lymphadenopathy/ pedal edema/ Jugular venous pulse/ rash/ acanthosis nigricans/ alopecia/ throat congestion/ oral ulcer/ glossitis/ spine tenderness/ temperature/ thyroid enlargement.
12. *Diagnosis and treatment provided*
13. *Reason for hospital admission*: Obstetric, medical, both, other
14. *Outcome variables*: Type of maternal complications, type of foetal complications

FUNDING AND APPROVAL

Funding source

A FLUID Research grant (Institutional grant) was approved for the purpose of this study.

Institutional review board and ethics approval

The research proposal was discussed with the Institutional Review Board in April 2017 and approval was obtained [IRB Min .No. 10626(OBSERVE), dated 03.04.17]

There were no ethical issues related to this study. Institutional review board approval was obtained prior to the commencement of the study.

DETAILED ALGORITHM OF THE STUDY

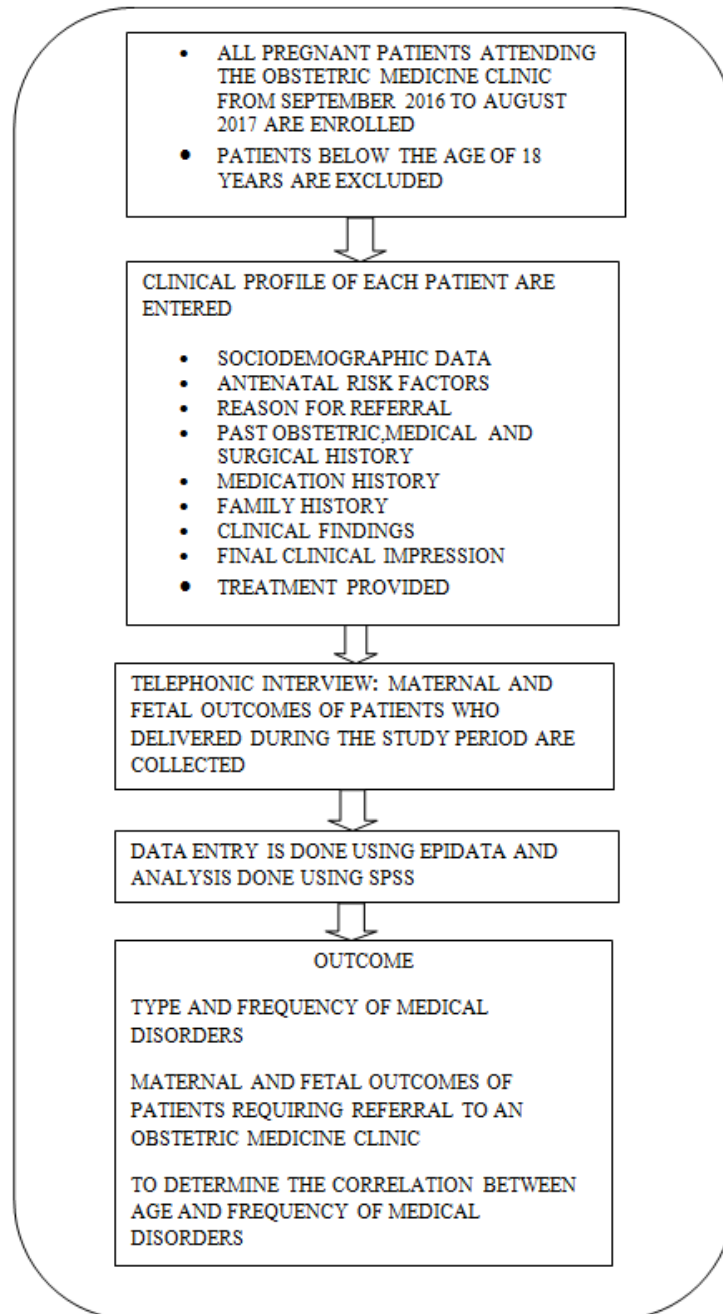


Figure 3: Algorithm of the study

DEFINITIONS

The following pathological conditions were assessed during the study and defined as per standard guidelines. (ANNEXURE I)

1. Hypertension in pregnancy
2. Asthma
3. Hypothyroidism and hyperthyroidism
4. Anaemia in pregnancy
5. Gestational diabetes mellitus
6. Overt diabetes mellitus
7. Asymptomatic bactriuria
8. Acute cystitis
9. Acute febrile illness
10. Pyelonephritis
11. Pneumonia/ lower respiratory tract infection
12. Influenza like illness
13. Influenza
14. Dengue fever
15. Dengue hemorrhagic fever (DHF)
16. Dengue shock syndrome (DSS)
17. Systemic lupus erythematosus (SLE)
18. Tuberculosis in pregnancy

PRIMARY AND SECONDARY OUTCOMES

The primary outcomes were

1. To study the common reasons for referral to the Obstetric Medicine clinic
2. Describe the frequency and type of medical disorders diagnosed in the Obstetric Medicine clinic.
3. Describe the maternal and foetal outcome of these patients.

The secondary outcomes were

1. To study the correlation of age and the common medical disorders in pregnancy.

DATA SOURCE

Demographic data, risk factors, reasons for referral, final diagnosis and treatment given will be collected for all the patients in a clinical research form. Maternal and foetal outcome will be assessed from hospital records or telephonic means (if delivery did not take place in this institution).

STATISTICAL METHOD

Demographic data will be analysed with descriptive statistics. Statistical analysis was performed using SPSS software for Windows version 16.0.

Means and standard deviations are provided for all the continuous variables and frequencies and percentages for categorical variables. Categorical variables will be presented as frequency tables. Correlation between two categorical variables will be tested using chi square test, and between two continuous variables will be tested using Pearson correlation coefficient. A p value of less than 0.05 was considered significant.

RESULTS

This study was conducted over a period of 11 months (September 2016 to July 2017).

This is a prospective cross sectional study with follow up of a historical cohort of pregnant patients who attended the Obstetric Medicine outpatient department at the Christian Medical College, a tertiary care centre in south India. The historical cohort consists of patients who attended the clinic from September 2016 to March 2017. The prospective cohort consists of patients who attended the clinic from April 2017 to July 2017.

The clinical profiles of these patients were gathered using a clinical research form.

The maternal and foetal outcome of patients who delivered during the study period were determined via a telephonic interview and based on hospital records at the time of delivery. The expected sample size was 480 based on prior attendance at the Obstetric Medicine outpatient clinic. Numbers of patients who attended the outpatient clinic during the study period was 445, out of which 52 were excluded and 393 patients were included in the analysis. Of the 52 patients who were excluded, 25 patients were postnatal, 19 patients did not consent for the study, 3 patients were preconceptional, 2 patients were less than 18 years, 2 patients were missed and 1 patient was proxy.

STUDY STATEMENT

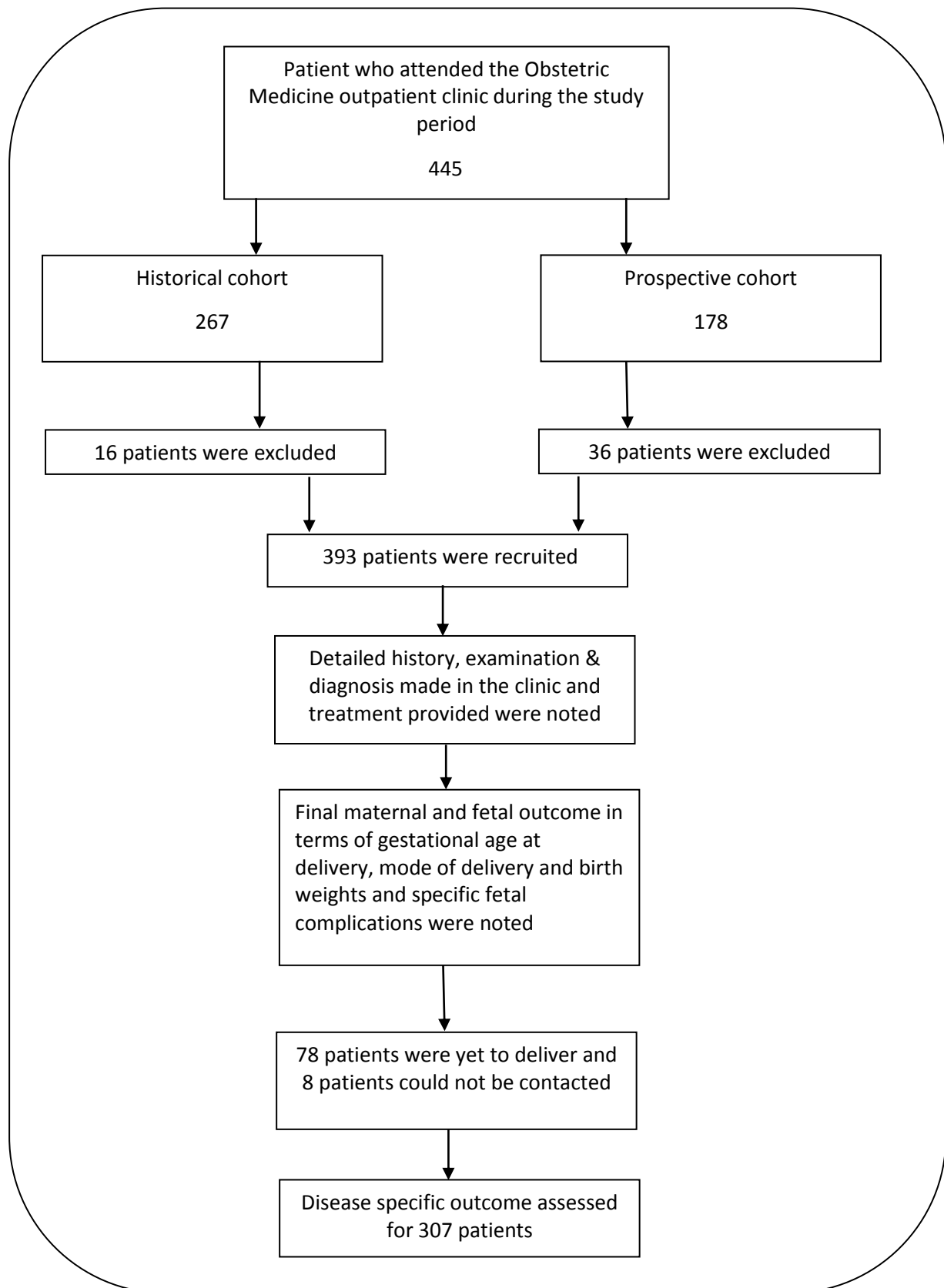


Figure 4: STROBE statement

Table 5: Baseline characteristics

SL.NO	VARIABLE	NUMBER (N=393) (%)
1.	Age	27.46 \pm 4.9 years (Mean)
2.	Occupation of subject	Housewife (81.5%)
3.	Primigravida	194 (49.4%)
	Gravida 2	119 (30.3%)
	Gravida 3	53 (13.5%)
	Gravida 4	17 (4.3%)
	Gravida 5	10 (2.5%)
4.	Prior Abortion	90 (22.9%)
5.	Weeks of gestation at presentation to clinic	21.72 \pm 9 weeks (Mean)
6.	No. of patients with antenatal risk factors	301 (76%)
	Thyroid disorder	112 (28.5%)
	Anaemia	109 (27.7%)
	Gestational diabetes mellitus (GDM)	89 (22.6%)
	Chronic hypertension	55 (14 %)
	Small for gestational age	53 (13.5%)
	Infertility	52 (13.2%)
	Preeclampsia	25 (6.4%)
	B12 deficiency	24 (6.1%)
	Gestational hypertension	21 (5.3%)
	Diabetes mellitus	19 (4.8%)
	Multiple pregnancy	9 (2.3%)
	HIV seropositive	1 (0.3%)
	HBsAg seropositive	3 (0.8%)
	Others	23 (5.8%)
7.	Significant past obstetric history	118 (30%)
8.	Significant family history	197 (50.1%)
	Diabetes Mellitus	131 (33.3%)
	Hypertension	111 (28.2%)
	Hypothyroidism	17 (4.3%)
9.	Significant prior drug intake	192 (48.9%)
10.	No. requiring hospital admissions	113 (28.8%)
11.	No. of deliveries during the study period	307 (78.1%)
12.	Gestational age at delivery	36.75 \pm 4.6 weeks (Mean)
13.	Birth weight (N=294)	2.8 \pm 0.596 kg (Mean)
14.	Mode of delivery	N=307
	Vaginal	176 (57.3%)
	LSCS	115 (37.4%)
15.	No. of foetal complications	60 (19.5%)
	No. of still births/ abortions	16 (5.2%)
16.	No. of maternal complications	37 (12.1 %)

Figure 5: Age distribution of the population

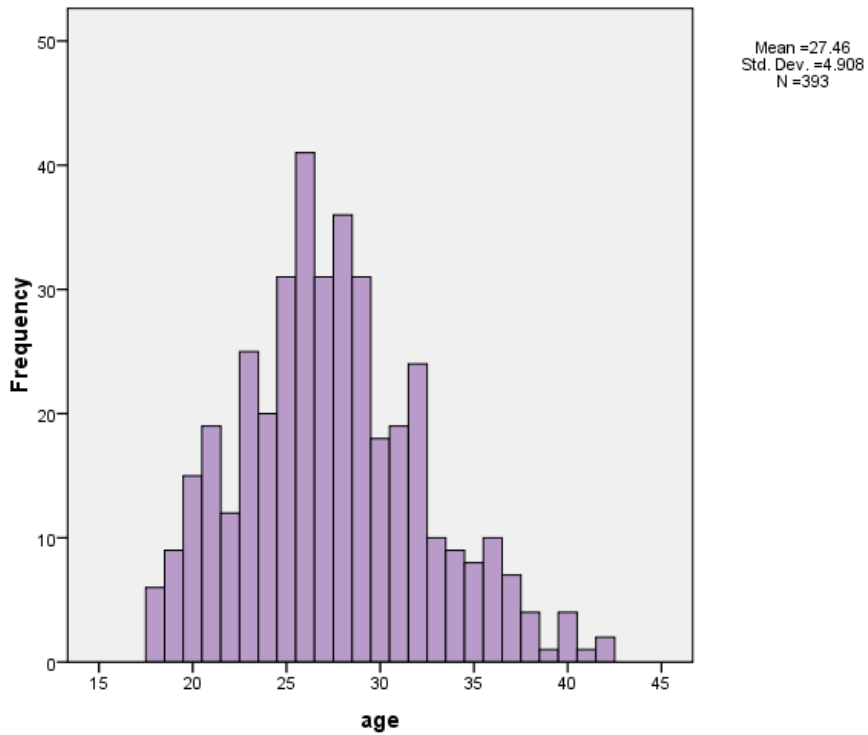
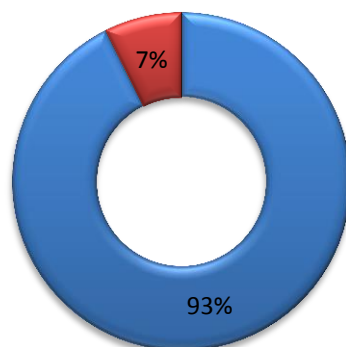


Figure 6: Age Category (N=393)

■ <35 YEARS ■ ≥35 YEARS (Elderly gravida)



BASELINE CHARACTERISTICS

The baseline characteristics and demographic data of the study group are as follows.

The average age was calculated to be 27.46 with standard deviation of 4.9 years (Figure 5).

81.5% patients were housewives. 7.4 % patients were categorised as elderly gravida (Figure 6). 49.4 % of patients were primigravida and 2.5 % of patients were grandmultipara. 22 % of patients gave a history of prior abortion. 76 % of patients had any of the multiple antenatal risk factors (Table 5).

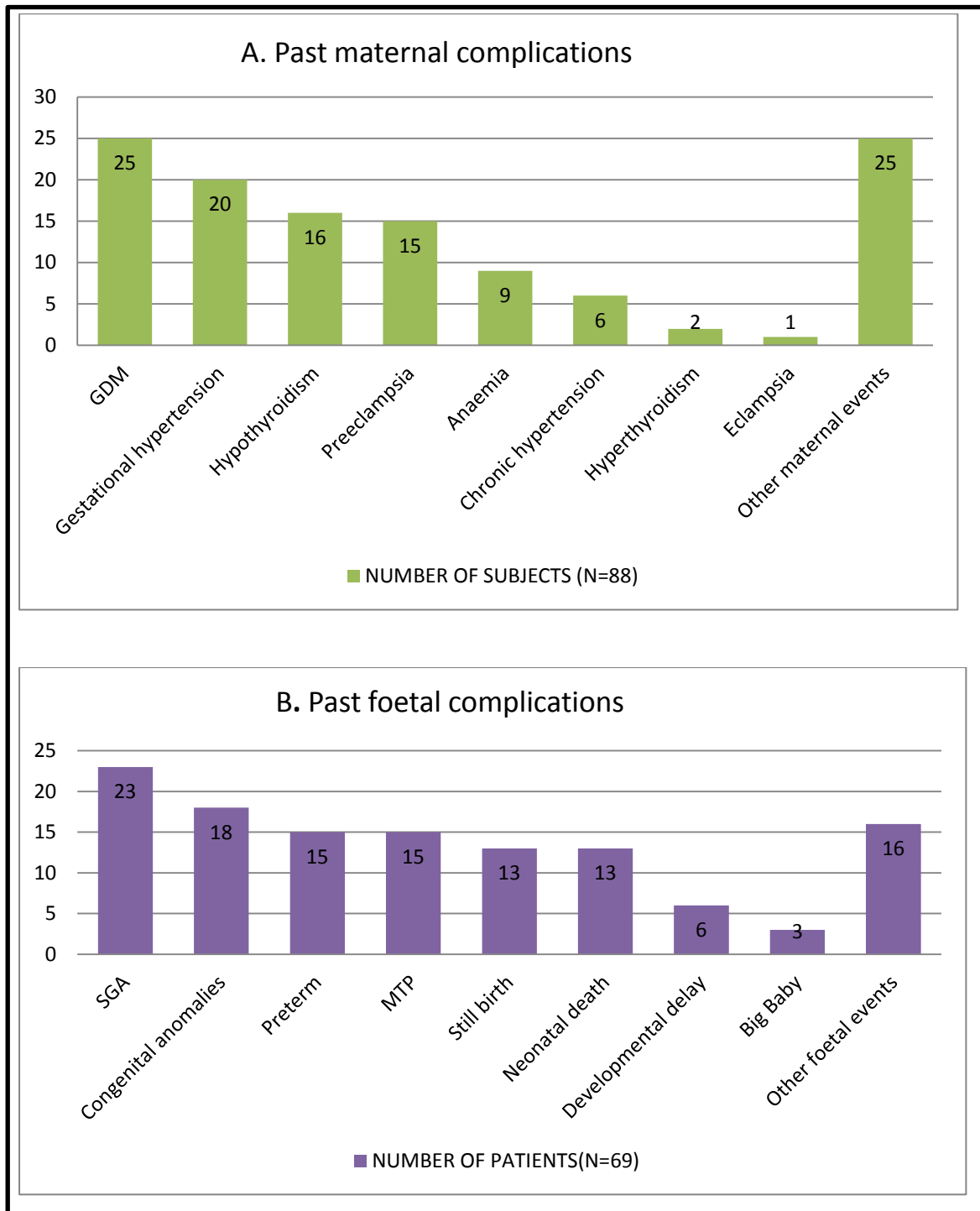
28.5 % of patients had an antenatal risk factor of thyroid disorder. Hypothyroidism was present in 106 patients. Anaemia was present in 27.7% of patients. Gestational diabetes mellitus was detected in 22.6% of patients. Chronic hypertension was present in 14 % of patients.

Thirteen percent patients gave a history of treatment for infertility. Gestational hypertension and preeclampsia was present in 5.3% and 6.4 % of patients respectively. Overt diabetes mellitus was present in 19 patients. There were 3 patients who were HBsAg seropositive and one patient who was Human immunodeficiency virus seropositive.

Twenty three patients had other antenatal risk factors namely polycystic ovarian syndrome, Rh negative blood group and liquor abnormality during the current pregnancy. Other additional risk factors were vitamin D deficiency, gestational thrombocytopenia, recurrent urinary tract infection and placenta previa.

PAST OBSTETRIC HISTORY

Figure 7: Significant past obstetric history

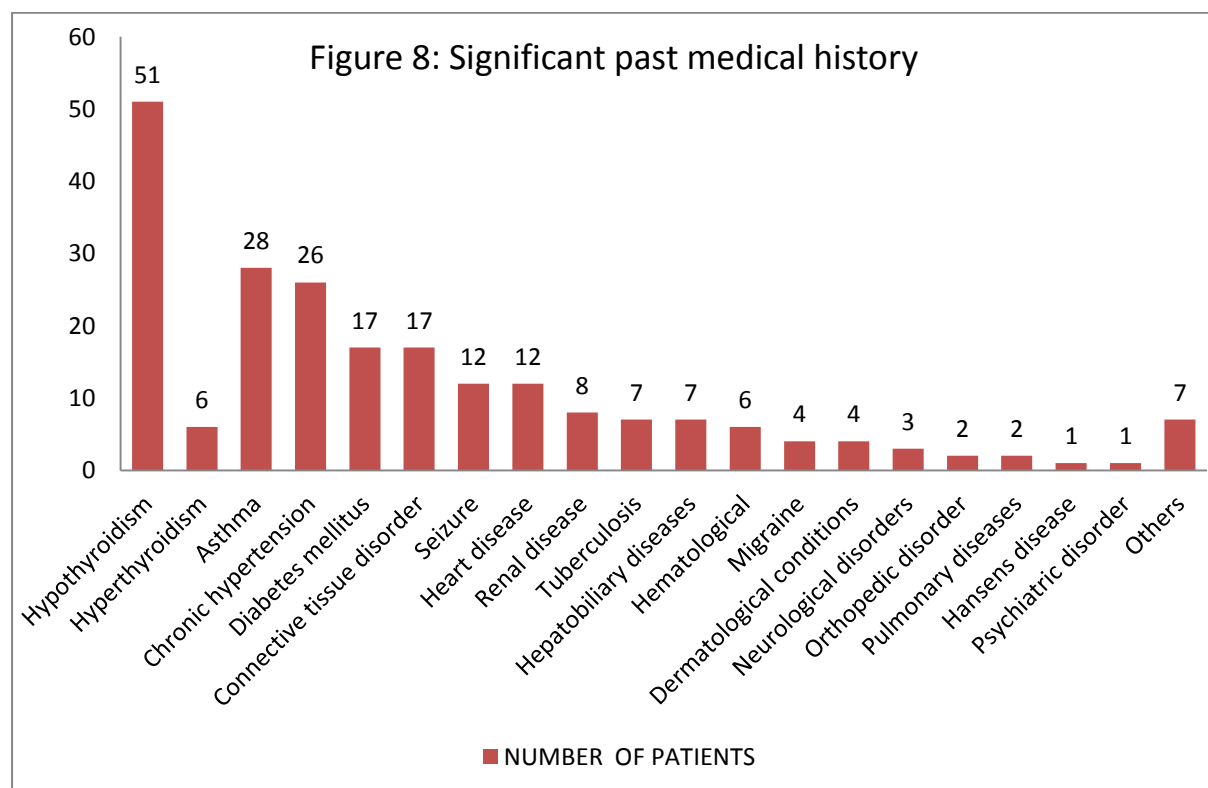


In this study population, 118 patients (30%) had a significant past obstetric history. 88 patients had significant maternal complication and 69 had past foetal complications

(Figure 7A &B). Other past maternal events include oligohydramnios, polyhydramnios, multiple pregnancy, persistent trophoblastic disease, abruption, postpartum haemorrhage and latent syphilis which were present in 25 patients. History of small for gestational age was present in 23 patients followed by congenital anomalies (18 patients), prior preterm delivery (15 patients) and prior medical termination of pregnancy (15 patients). The others were neonatal death, developmental delay and prior big baby.

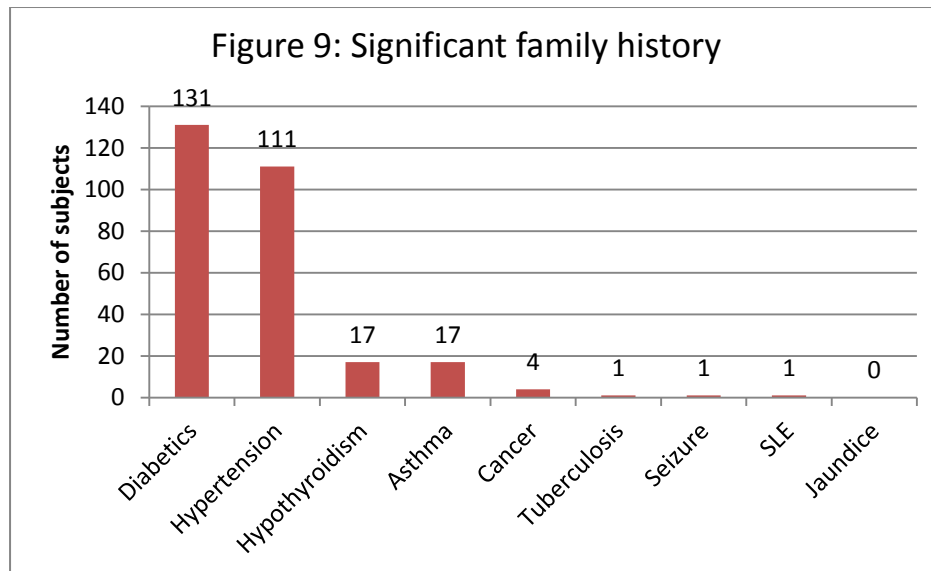
PAST MEDICAL HISTORY

The most common past medical history was hypothyroidism (51 patients) followed by asthma (28 patients), chronic hypertension (26 patients) and diabetes mellitus (17 patients). (Figure 8)



*Other co morbidities: History of deliberate self-harm (4), Latent syphilis (1), Benign Gastric Outlet Obstruction (1), Otosclerosis (1)

SIGNIFICANT FAMILY HISTORY



A significant family history was present in 50.1% of patients in the study population (197 patients). Thirty three percent had family history of diabetes mellitus and 28% had family history of hypertension. Other significant family history included hypothyroidism and asthma in the 1st degree relative. One patient had systemic lupus erythematosus in the sibling. (Figure 9)

SIGNIFICANT PRIOR DRUG INTAKE

Significant prior drug intake was present in 48.9% of patients who attended the outpatient clinic. 31 patients of those with hypertensive disease in pregnancy were on some antihypertensive before attending the Obstetric Medicine outpatient clinic. 17 patients were already on metformin and 6 patients were on insulin for control of blood sugar. 8 patients were on vitamins other than calcium and iron. 10 patients were on

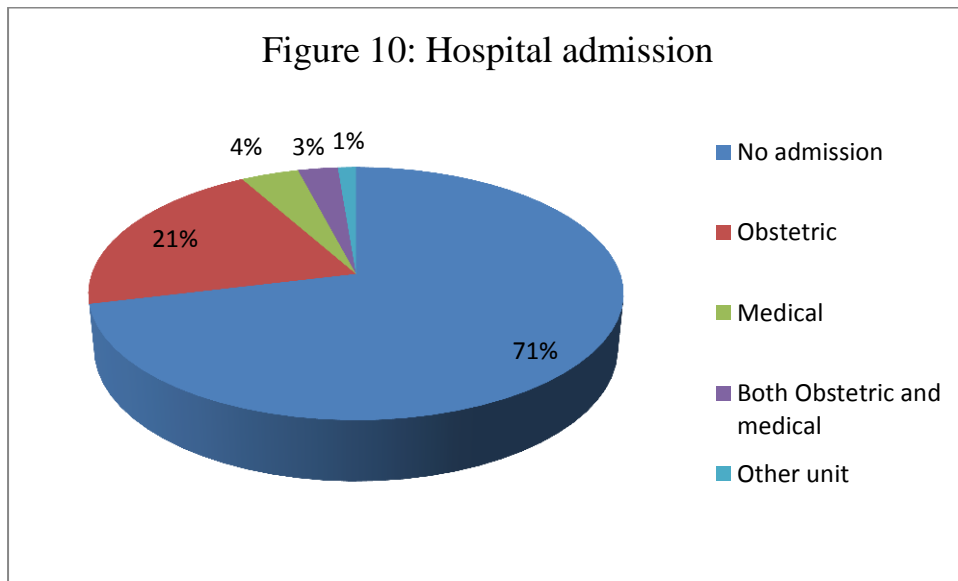
steroids, 10 were on disease modifying drugs. 45 patients were on low dose aspirin (Table 6).

17 patients received prior treatment for autoimmune disease which included corticosteroids (6 patients), hydroxychloroquine (8 patients), azathioprine (5 patients) and sulphasalazine (1 patient), low dose aspirin (8 patients), low molecular weight heparin (2 patients), human immunoglobulin (1 patient) and warfarin (1 patient).

Table 6: Prior significant drug history

Sl. No.	Drug	Number
1.	Thyroxin	86
2.	Ecosprin	45
3.	Antihypertensive	31
4.	Metformin	17
5.	Antibiotics	14
6.	Corticosteroid	10
7.	DMARD	10
8.	Vitamins	8
9.	Insulin	6

REASON FOR HOSPITAL ADMISSION



29% patients required hospital admission (113 patients). 21 % of patients were admitted to the Obstetric ward. 4% of the patients were admitted in the medical ward alone. 3% were admitted both in obstetrics and medical wards and 1% required admission under other specialities (Figure 10).

Table 7: Medical reasons for hospital admission

SL.NO.	DIAGNOSIS	VALUE
1.	Infection*	13
2.	Anaemia	5
3.	Hypertension	4
4.	Cardiovascular disease**	4
5.	Autoimmune disease #	5
6.	Vestibular neuronitis	1
7.	Restrictive lung disease	1
8.	Acute exacerbation of Bronchial asthma	1
9.	Hypothyroidism	1
10.	Uncontrolled diabetes mellitus	1
11.	Nonspecific musculoskeletal pain	1
12.	Hyperemesis gravidarum	1
13.	Acid peptic disease	1

*13 patients were admitted for the management of some type of infection (Table 7).

Of the thirteen patients the most common diagnosis was urinary tract infection (5 patients), pyelonephritis (1 patient), symptomatic neurocysticercosis (1 patient), tubercular meningitis (1 patient), acute bronchitis (1 patient), dengue with thrombocytopenia (patient 1), lower respiratory tract infection (1 patient) and viral fever (1 patient). Five patients were admitted for management of severe anaemia in pregnancy.

Four patients were admitted for the control of high blood pressure of which two patients had chronic hypertension. Two patients had preeclampsia superimposed on chronic hypertension and one patient had posterior reversible encephalopathy syndrome (PRES).

**Four patients were admitted for the management of cardiovascular disease namely pulmonary artery hypertension, paroxysmal tachycardia, coarctation of the aorta and Takayasu's arteritis.

#Autoimmune disorders requiring hospital admission were- Systemic lupus erythematosus with lupus nephritis (2 patients), undifferentiated connective tissue disease (1), Evans syndrome (1) and antiphospholipid antibody syndrome (1).

Five patients required admission under other specialities for the following reasons- pituitary adenoma with secondary diabetes mellitus for glycaemic control (endocrinology), rheumatic heart disease status post MVR with severe pulmonary artery hypertension-NYHA III (cardiology), pheochromocytoma for laparoscopic

adrenalectomy (endocrine surgery), left renal artery stenosis due to fibromuscular dysplasia for renal angiography (cardiology) and left renal artery stenosis for recanalisation with covered stent (cardiology).

Table 8: Number of hospital admissions

Number of admissions	Value
1	83
2	24
≥ 3	6

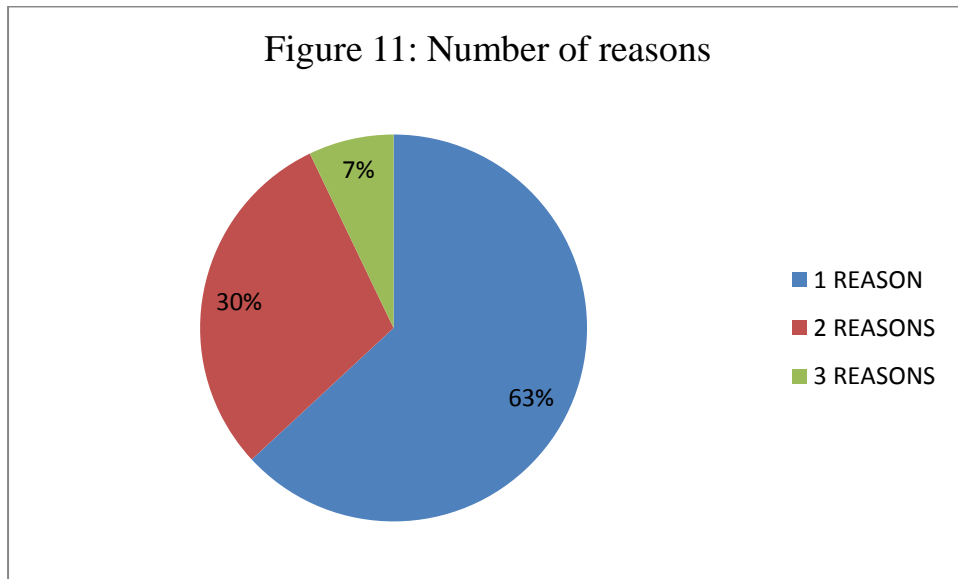
83 patients required only one hospital admission.

Six patients required three or more admissions during their pregnancy. They were admitted for false labour, autoimmune disease, evaluation of thrombocytopenia, control of high blood pressure and infections.(Table 8)

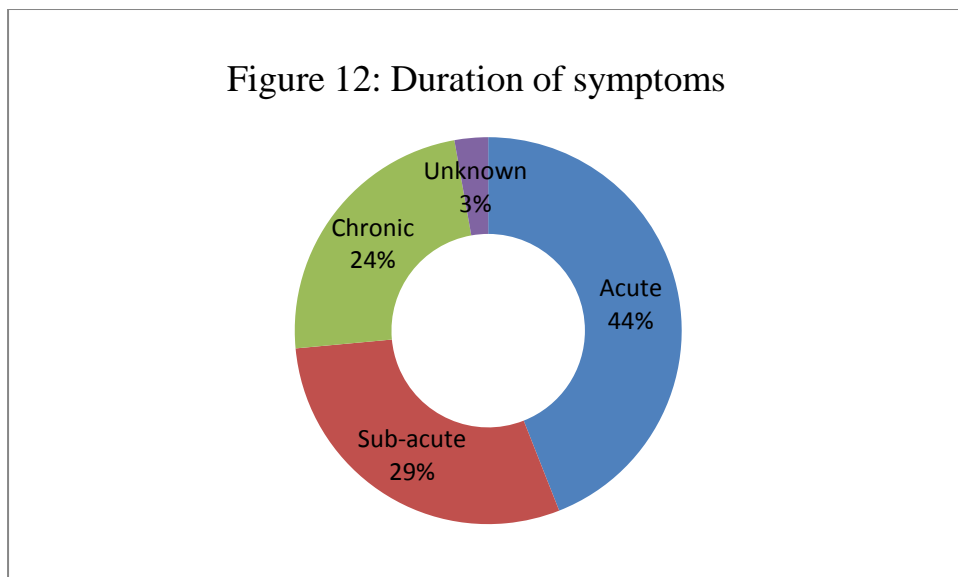
PRIMARY OUTCOME

1. COMMON REASONS FOR REFFERAL TO OBSTETRIC MEDICINE CLINIC

1a. NUMBER OF REASONS



1b. DURATION OF SYMPTOMS



1c. REASONS FOR REFERRAL TO THE OBSTETRIC MEDICINE CLINIC

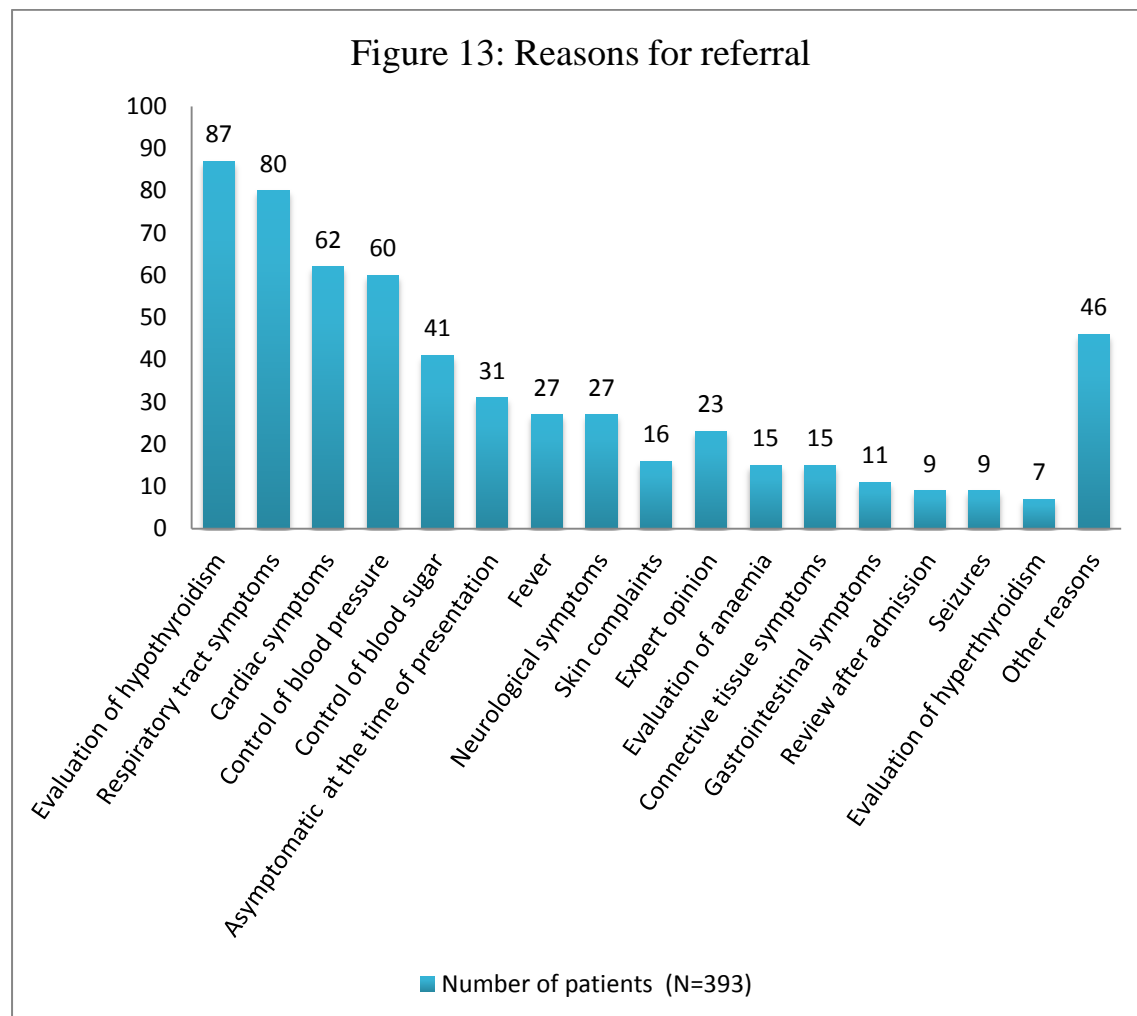


Figure 13 shows the common reasons for referral to the obstetric medicine outpatient clinic. 248 patients were referred for a single reason. 22.1% patients were referred for the evaluation and management of hypothyroidism.

20.4 % patients presented with respiratory tract symptoms such as cough, rhinorrhoea, throat pain and wheeze.

The cardiac symptom was breathlessness (38 patients) followed by palpitations (12 patients) and chest pain (8 patients). The other cardiac symptoms are pedal oedema, hyperventilation, syncope, orthopnoea and for titration of anticoagulants.

Sixty patients were referred for the management of high blood pressure. 41 patients were referred for control of blood sugar. 30 patients were diagnosed to have gestational diabetes mellitus and 11 patients were diagnosed to have pregestational diabetes mellitus. Of these patients, 2 patients required hospital admission for glycaemic control.

Twenty seven patients presented with fever. Among these patients, 20 patients also had cough as an associated symptom.

Twenty seven patients presented with neurological symptoms. Eight patients had headache, five patients had carpal tunnel syndrome, and four patients had Bell's palsy.

Sixteen patients were referred with dermatological symptoms such as generalised itching (8 patients), hair loss with photosensitivity, vesicular lesions and generalised skin rash. One patient was diagnosed to have Huriez syndrome and one patient was with systemic lupus erythematosus.

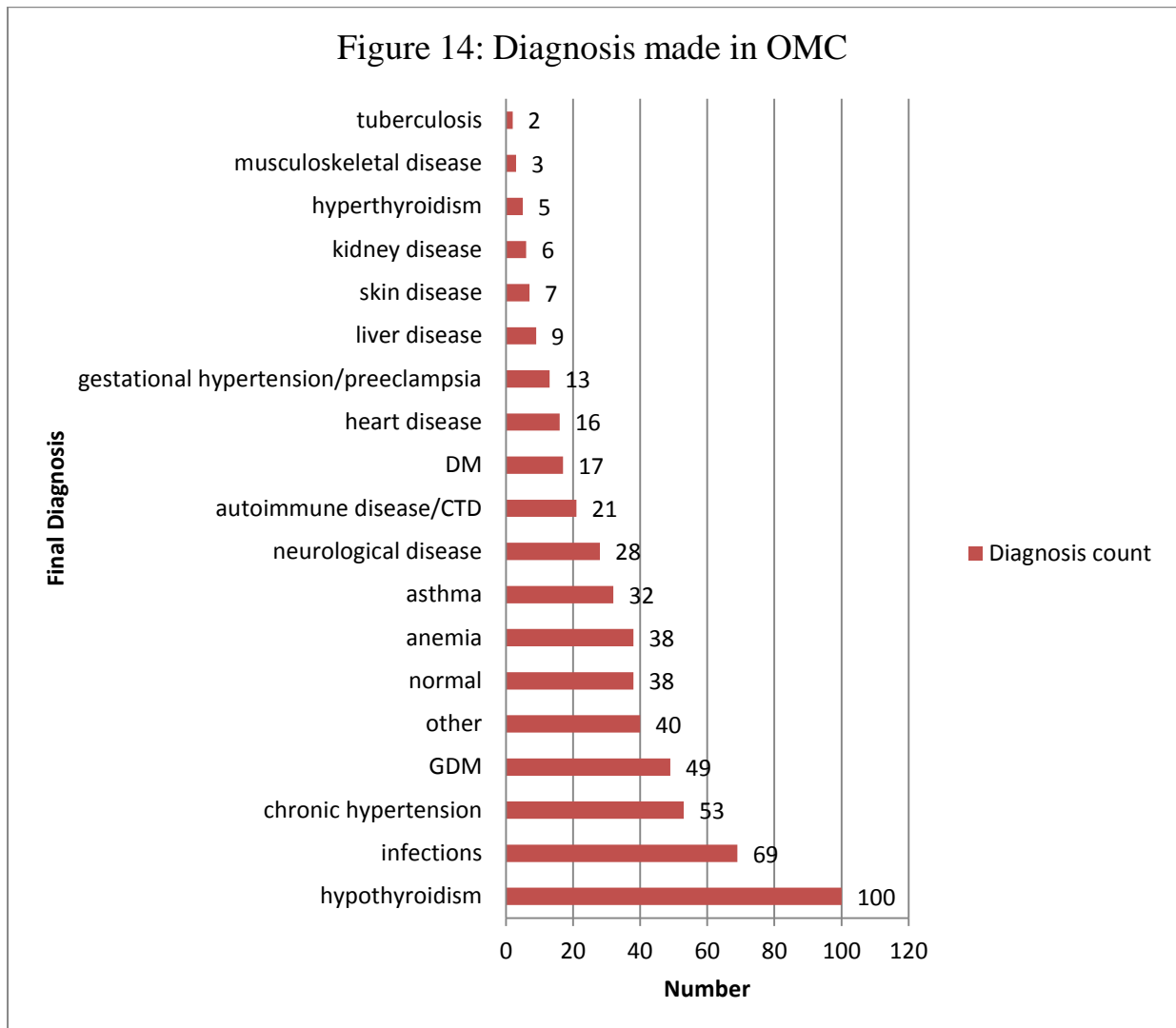
Forty six patients presented to the clinic for other reasons which included radiological evidence of splenomegaly, asymptomatic proteinuria, ANA positive, LA positive, lean body habitus, mastalgia, deep vein thrombosis, recent enteric fever, for opinion on evaluation of APLA syndrome, urinary tract symptoms, musculoskeletal symptoms, easy fatigability and prior kidney disease.

Reasons for Expert opinion: Twenty three patients were referred for expert opinion namely for clearance for MDT for Hansen's disease, irregularly irregular pulse, for cardiovascular examination, absent peripheral pulses, Takayasu's arteritis, for titration of anticoagulation and for change over from warfarin to heparin. Other reasons were optimisation of antiepileptic drugs, distal renal tubular acidosis, focal segmental glomerulosclerosis (FSGS), class IV lupus nephritis, evaluation of thrombocytopenia, HIV seropositive, HBSAG seropositive, latent syphilis, rheumatoid arthritis, old spine tuberculosis, old cortical vein thrombosis.

Out of the 393 patients, 9 patients came to clinic for review after a recent hospital admission under medicine.

2. DIAGNOSIS AND TREATMENT

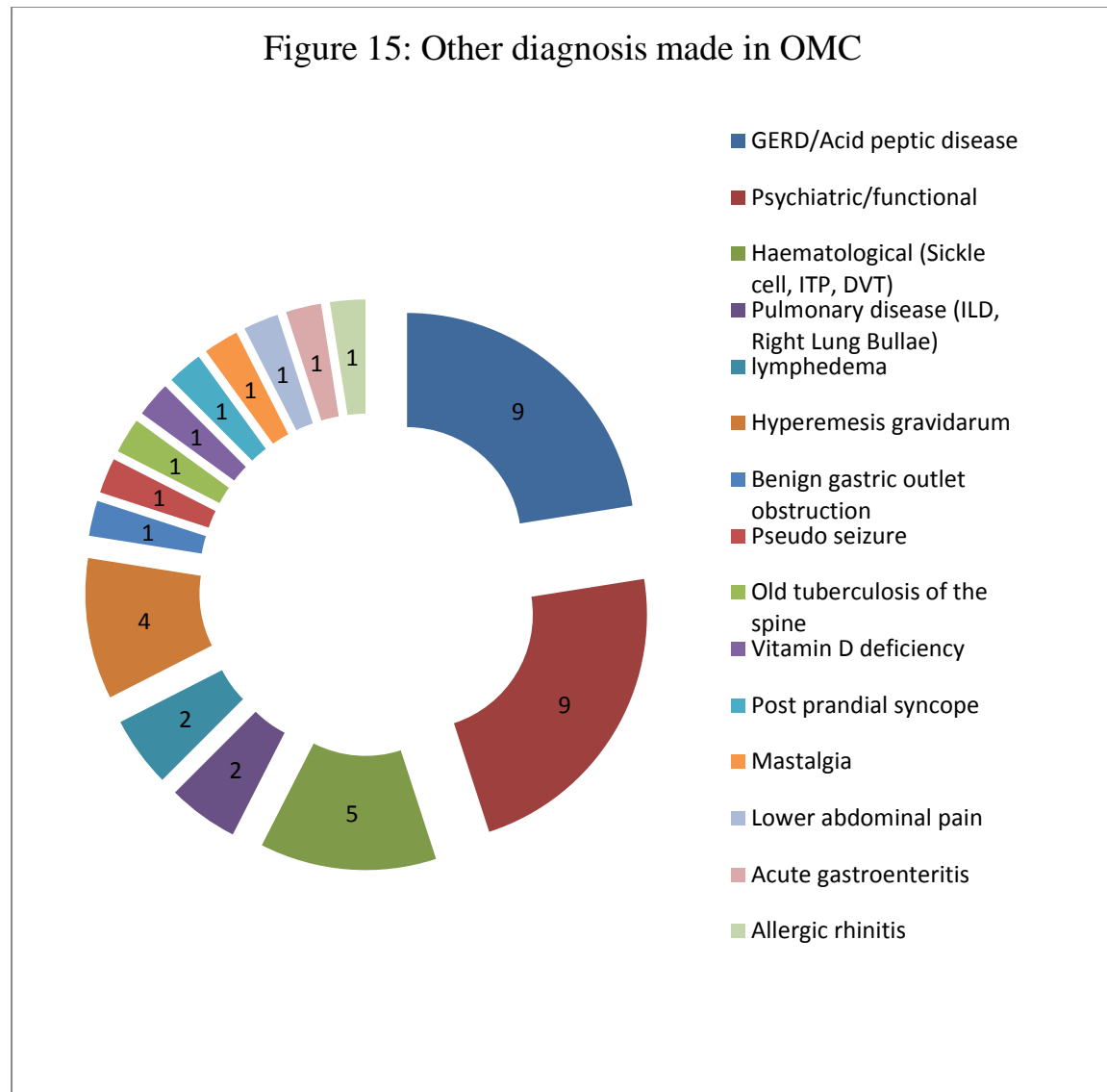
2a. FREQUENCY OF MEDICAL DISORDERS DIAGNOSED IN OMC



The spectrum of diagnosis made among the patients who attended the obstetric medicine clinic is described above (Figure 14). The most common diagnosis was hypothyroidism (25%) followed by some type of infection (17.5%) and chronic hypertension was the third most common problem (13.4%). Two patients were diagnosed to have tuberculosis. One patient had a tuberculoma and one patient had

tubercular meningitis. 49 patients were diagnosed to have gestational diabetes mellitus. Thirty eight patients were diagnosed as normal and hence were reassured.

2b. OTHER DIAGNOSIS MADE IN OBSTETRIC MEDICINE CLINIC

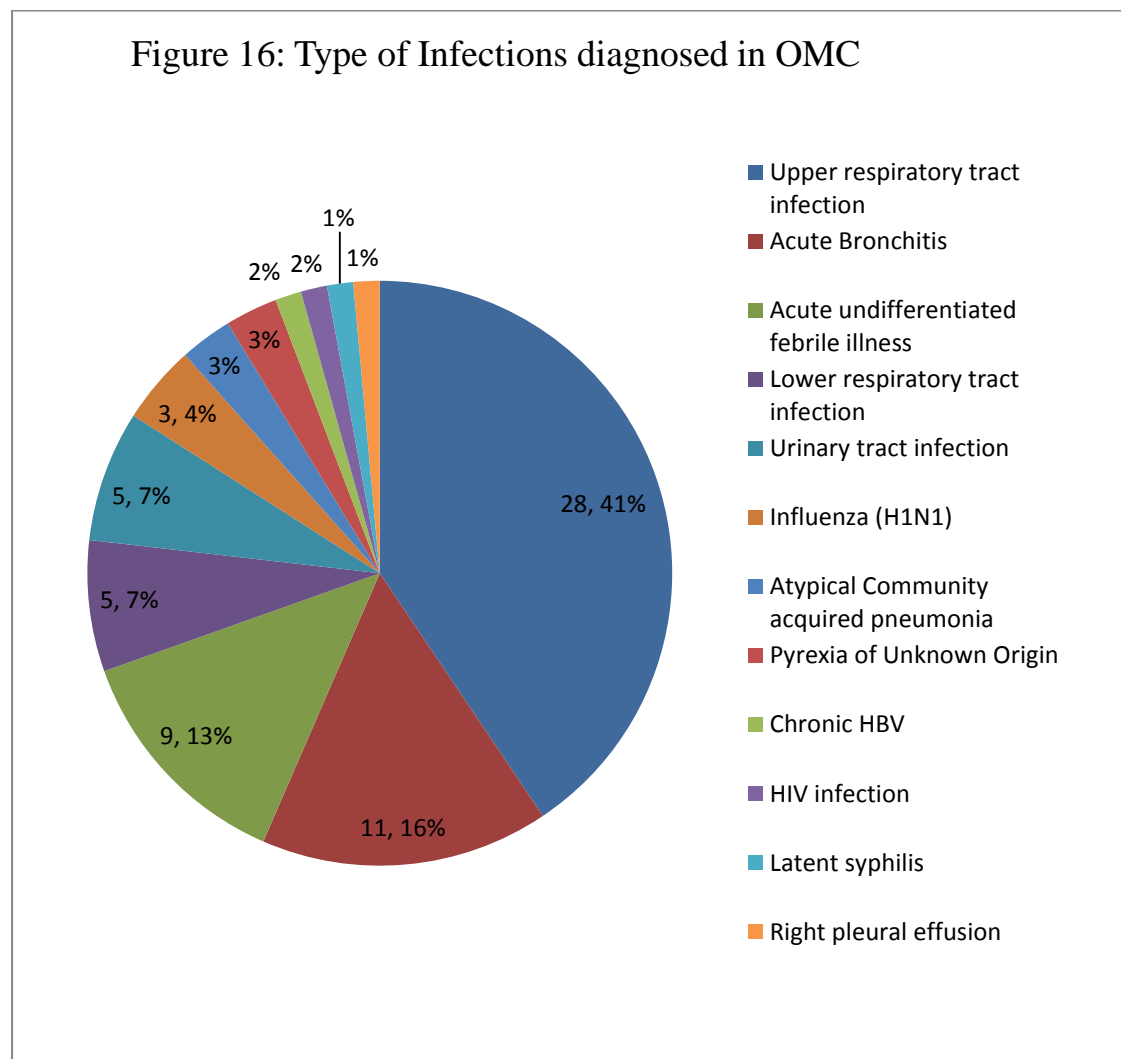


Other diagnoses were made in the obstetric medicine clinic among 40 patients (Figure 15). Nine patients had acid peptic disease/gastroesophageal reflux disease. Nine other

patients had functional disorder such as anxiety, claustrophobia, panic attack, adjustment disorder and episodic hyperventilation.

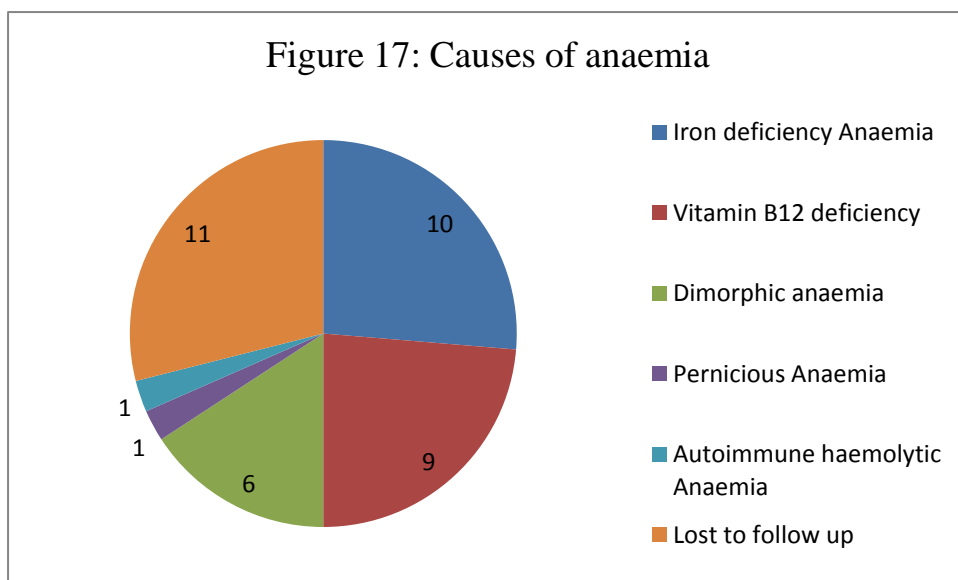
The haematological disorders identified were deep vein thrombosis (2 patients), idiopathic thrombocytopenic purpura in remission and sickle cell disease. Two patients had nonspecific lymphedema. Two patients had pulmonary disease such as ILD (1 patient) and one patient was diagnosed to have a right lung bullae.

2c. TYPE OF INFECTIONS DIAGNOSED IN OBSTETRIC MEDICINE CLINIC



An upper respiratory tract infection was diagnosed in 28 patients (Figure 16). Acute bronchitis, lower respiratory tract infection, influenza and atypical community acquired pneumonia constituted a significant number of patients (21 patients). 9 patients had acute undifferentiated febrile illness and 5 patients had urinary tract infection. Two patients were evaluated for pyrexia of unknown origin. One patient was detected to have right pleural effusion.

2d. TYPE OF ANAEMIA DIAGNOSED IN OBSTETRIC MEDICINE CLINIC



Overall anaemia was present in 27 % of this study population (109 patients) as an antenatal risk factor at the time of delivery (Figure 17).

38 patients were diagnosed to have anaemia in the OMC clinic. 10 patients were diagnosed to have iron deficiency anaemia and 9 patients with B 12 deficiency. 6 patients had dimorphic anaemia. However in 11 patients the type of anaemia was unknown, since they did not follow up with investigations.

2e. TREATMENT RECEIVED IN OBSTETRIC MEDICINE CLINIC

TREATMENT FOR CHRONIC HYPERTENSION

Out of the 55 patients who were diagnosed to have chronic hypertension, 16 were advised home BP monitoring, 24 patients were on single antihypertensive and 3 patients required three antihypertensives for blood pressure control (Table 9).

The most common drug used was Labetalol followed by Nifedipine, Alphamethyldopa and Hydralazine. (Table 10)

Table 9: Treatment modality for chronic hypertension

SL.NO.	TREATMENT MODALITY	VALUE
1.	Home BP monitoring	16
2.	Single antihypertensive	24
3.	Dual antihypertensive	9
4.	Three antihypertensive	3
5.	Unknown	3

Table 10: Type of antihypertensive used

SL.NO.	ANTIHYPERTENSIVE	VALUE
1.	Labetalol	31
2.	Nifedipine	11
3.	Alphamethyldopa	6
4.	Hydralazine	3

TREATMENT FOR GESTATIONAL DIABETES MELLITUS

89 patients were noted to have gestational diabetes. 44 patients were receiving treatment for this elsewhere and treatment modality was not known. 29 patients were

prescribed metformin and 14 patients were advised medical nutrition therapy alone.

Two patients were advised metformin and insulin (Table 11).

Table 11: Treatment for gestational diabetes mellitus

SL.NO.	TREATMENT MODALITY	VALUE
1.	Unknown	44
2.	Metformin	29
3.	MNT	14
4.	Metformin and Insulin	2

TREATMENT FOR PREGESTATIONAL DIABETES MELLITUS

19 patients were diagnosed to have pregestational diabetes mellitus. Out of which 10 patients were advised metformin and insulin. One patient required Metformin, Insulin and Voglibose for glycaemic control (Table 12).

Table 12: Treatment for pregestational diabetes mellitus

SL.NO.	TREATMENT MODALITY	VALUE
1.	Metformin and Insulin	10
2.	Metformin	3
3.	Unknown	2
4.	MNT	1
5.	Insulin	1
6.	Acarbose	1
7.	Metformin, insulin and Voglibose	1

USE OF LOW DOSE ASPIRIN IN PATIENTS AT RISK FOR DEVELOPING PREECLAMPSIA

According to the SOGC guidelines 2014, patients at risk for preeclampsia who need to be initiated on low dose aspirin are those who have previous preeclampsia, chronic

hypertension, pregestational diabetes mellitus, antiphospholipid antibody syndrome, renal disease and multiple pregnancies. In our study there were 100 patients with any of the above risk factors. Only 54 patients were on low dose aspirin.

PATIENTS WITH RECURRENT HYPERTENSIVE DISORDER

In our population, 38 patients had hypertension detected in their previous pregnancy. Out of which 50% were diagnosed with chronic hypertension in the present pregnancy

3. FOETAL AND MATERNAL OUTCOME

3a. OVERALL MATERNAL AND FETAL OUTCOME

Out of the 393 patients, 78 patients were yet to deliver at the end of the study period. Outcome data could be gathered for only 307 patients. Eight patients could not be contacted and were lost to follow up. The mean gestational age at delivery for the 307 patients was 36.75 ± 4.6 weeks. The most common mode of delivery was vaginal (133 patients), followed by lower segment caesarean section (115 patients) and instrumental deliveries (43 patients).

Maternal complications were present in 37 patients. The single most common maternal complication was postpartum haemorrhage which was present in 9 patients. This was followed by urinary tract infections (8 patients) and postpartum fever in 6 patients. There were no maternal deaths. The mean birth weight was calculated on 294 patients which was 2.8 ± 0.596 kg. Birth weight data was not available for 13

deliveries since these were 1st or 2nd trimester abortions. There were 16 still births or abortions among the 307 patients.

Table 13: Gestational age at delivery

SL.NO.	GESTATIONAL AGE	VALUE(N=291)
1.	Term (>37 WEEKS)	233 (80%)
2.	Late Preterm (32-37 WEEKS)	54 (18.5%)
4.	Very Preterm (28-32 WEEKS)	3 (1.0%)
3.	Extremely Preterm (<28 WEEKS)	1 (0.3%)

Table 13 shows the gestational age at delivery of the study population. There were 291 patients who had live births. 80% patients delivered at term and the rest were preterm.

13 Patients who were noted to have abortions delivered before 28 weeks of gestation.

Table 14: Birth weight categories

SL.NO.	BIRTH WEIGHT	VALUE(N=294)
1.	>2.5 Kg	221 (75.2%)
2.	Low birth weight (1.5-2.5 Kg)	65 (22.1%)
3.	Very Low Birth weight (1.0-1.5 Kg)	4 (1.4%)
4.	Extremely Low birth weight (<1 Kg)	4 (1.4%)

75.2% of patients delivered babies of normal birth weight. 4 patients had extremely low birth weight babies (Table 14).

Table 15: Type of foetal complication

SL.NO.	FOETAL COMPLICATION	NUMBER
1.	Nursery Admission	34
2.	Still birth/Abortion	16
3.	Neonatal Jaundice	7
4.	Neonatal death	1
5.	Right pneumothorax	1
6.	Right ectopic testes	1

60 patients reported having some form of foetal complication. 34 babies required nursery admission as judged by the treating doctor. There were 16 abortions/ still births. 7 patients developed neonatal jaundice. There was one neonatal death on day 11 (Table 15).

3b. BAD FOETAL OUTCOME

The following tables give the clinical profile of the patients who had abortions or still births.

The mean age of the patient was 26.19 years with standard deviation of 3.67 years.

Nine patients were primigravida. Four patients had prior abortions.

Table 16: Antenatal risk factors

SL NO.	ANTENATAL RISK FACTOR	VALUE
1.	Chronic hypertension	5
2.	Preeclampsia	2
3.	Hypothyroidism	4
4.	GDM	1
5.	Anaemia	1
6.	Infertility	1

Five patients who subsequently developed abortions had chronic hypertension.

Four patients had an antenatal risk factor of hypothyroidism. 2 patients developed preeclampsia (Table 16).

Table 17: Reasons for referral of patients with bad foetal outcome

SL NO.	REASON FOR REFERRAL	VALUE
1.	Control of blood pressure	4
2.	Hypothyroidism	3
3.	Hyperthyroidism	1
4.	Fever	2
5.	Respiratory tract symptoms	3
6.	Cardiac symptoms	1
7.	Musculoskeletal symptoms	1
8.	Urinary tract symptoms	1
9.	Thrombocytopenia	1
10.	Expert opinion	1
11.	Others*	3

***Other reasons-** Absent pulse, HBsAg positive, Radiological evidence of splenomegaly

Table 18: Diagnosis of patients with bad foetal outcome

SL NO.	DIAGNOSIS	VALUE
1.	Chronic hypertension	6
2.	Hypothyroidism	4
3.	Infection*	5
4.	Autoimmune diseases	3
5.	GDM	1
6.	Coarctation of aorta	1
7.	Adult onset Nephrotic syndrome	1
8.	Others**	2

*Infections: Upper respiratory infection (2), Post viral bronchitis (1), chronic hepatitis B infection (1), Urinary tract infection (1)

****Others: Pyrexia of unknown origin, Bicytopenia -? Evans syndrome**

Table 19: Gestational age at delivery of still births/abortions

SL.NO.	GESTATIONAL AGE	VALUE
1.	<28 WEEKS	13
2.	32-37 WEEKS	2
3.	28-32 WEEKS	1

3c. REASON FOR MEDICAL TERMINATION OF PREGNANCY

Out of 16 foetal deaths, 7 were medical termination of pregnancy for the following reasons.

1. SLE Class IV Lupus nephritis with autoimmune haemolytic anaemia and posterior reversible encephalopathy syndrome (15 weeks)
 2. Chronic hypertension with severe preeclampsia, HELLP syndrome (26 weeks)
 3. Coarctation of the aorta (11 weeks)
 4. Takayasu's arteritis (13 weeks)
 5. Adult onset Nephrotic syndrome (18 weeks)
 6. Prelabour premature rupture of membranes (19 weeks)
 7. Holoprosencephaly (20 weeks)
-

SECONDARY OUTCOMES

1. CORRELATION OF AGE, GRAVIDA AND FAMILY HISTORY WITH MEDICAL DISEASES IN PREGNANCY

1a. Correlation of age, gravida and family history with chronic hypertension

There is no statistically significant correlation between age (≥ 35 years) or gravida (primigravida) and presence or absence of chronic hypertension.

25.2% of patients with a family history of hypertension (1st degree relative) were found to have chronic hypertension ($p < 0.001$) (Table 20).

Table 20: Correlation of age, gravida and family history with chronic hypertension

Sl.no	Risk Factor	Category	Chronic hypertension Present (%)	Chronic hypertension Absent (%)	p-value
1.	Age (years)	≥ 35	5 (17.2)	24 (82.8)	0.580
		< 35	50 (13.7)	314 (86.3)	
2.	Gravida	Primi	21 (10.8)	173 (89.2)	0.074
		Multi	34 (17.1)	165 (82.9)	
3.	Family history of hypertension	Yes	28 (25.2)	83 (74.8)	$< 0.001^*$
		No	27 (9.6)	255 (90.4)	

1b. Correlation of age, gravida and family history with preeclampsia and gestational hypertension

12.6% of patients with family history of hypertension developed preeclampsia ($p = 0.003$) (Table 21).

There is no statistically significant correlation between age (≥ 35 years) and gravida (primigravida/multigravida) and presence or absence of preeclampsia and gestational hypertension (Table 21, 22).

Table 21: Correlation of age, gravida and family history with preeclampsia

Sl.no	Risk Factor	Category	Preeclampsia	Preeclampsia	p-value
			Present (%)	Absent (%)	
1.	Age (years)	≥ 35	2 (6.9)	27 (93.1)	0.706
		< 35	23 (6.3)	341 (93.7)	
2.	Gravida	Primi	14 (7.2)	180 (92.8)	0.540
		Multi	11 (5.5)	180 (94.5)	
3.	Family history of hypertension	Yes	14 (12.6)	97 (87.4)	0.003*
		No	11 (3.9)	271 (96.1)	

Table 22: Correlation of age, gravida and family history with gestational hypertension

Sl.no	Risk Factor	Category	Gestational hypertension	Gestational hypertension	p-value
			Present (%)	Absent (%)	
1.	Age (years)	≥ 35	1 (3.4)	28 (96.6)	> 0.999
		< 35	20 (5.5)	344 (94.5)	
2.	Gravida	Primi	12 (6.2)	182 (93.8)	0.464
		Multi	9 (4.5)	190 (95.5)	
3.	Family history of hypertension	Yes	8 (7.2)	103 (92.8)	0.323
		No	13 (4.6)	269 (95.4)	

There is no correlation of family history of hypertension with gestational hypertension (p- 0.323) (Table 22).

1c. Correlation of age, gravida and family history with gestational and pregestational diabetes

30.5% of patients with family history of diabetes mellitus were noted to have gestational diabetes mellitus (p- 0.01) (Table 23).

There is no statistically significant correlation between age (≥ 35 years) or gravida (primigravida/multigravida) and presence or absence of gestational diabetes mellitus (GDM).

Table 23: Correlation of age, gravida and family history with gestational diabetes mellitus

Sl.no.	Risk Factor	Category	Gestational diabetes Present (%)	Gestational diabetes Absent (%)	p-value
1.	Age (years)	≥ 35	10 (34.5)	19 (65.5)	0.114
		< 35	79 (21.7)	285 (78.3)	
2.	Gravida	Primi	38 (19.6)	156 (80.4)	0.153
		Multi	51 (25.6)	148 (74.4)	
3.	Family history of Diabetes mellitus	Yes	40 (30.5)	91 (69.5)	0.01*
		No	49 (18.7)	213 (81.3)	

There is statistically significant correlation between family history of diabetes mellitus and pregestational diabetes (p <0.001) (Table 23, 24).

Table 24: Correlation of age, gravida and family history with pregestational diabetes mellitus

Sl.no.	Risk factor	Category	Pre-gestational diabetes Present (%)	Pre-gestational diabetes Absent (%)	p-value
1.	Age (years)	≥ 35	2 (6.9)	27 (93.1)	0.642
		< 35	17 (4.7)	347 (95.3)	
2.	Gravida	Primi	10 (5.2)	184 (94.8)	0.770
		Multi	9 (4.5)	190 (95.5)	
3.	Family history of Diabetes mellitus	Yes	15 (11.5)	116 (88.5)	$< 0.001^*$
		No	4 (1.5)	258 (98.5)	

2. CORELATION OF AGE AND GRAVIDA WITH OTHER MEDICAL DISEASES IN PREGNANCY

There was no statistically significant correlation of age (≥ 35 years) and gravida (primigravida) with anaemia, hypothyroidism, B12 deficiency, asthma, autoimmune disease or infections. (Tables 25, 26, 27, 28, 29, 30)

Table 25: Correlation of age and gravida with anaemia

Sl.no.	Risk factor	Category	Anaemia Present (%)	Anaemia Absent (%)	p-value
1.	Age (years)	≥ 35	8 (27.6)	21 (72.4)	0.985
		< 35	101 (27.7)	263 (72.3)	
2.	Gravida	Primi	50 (25.8)	144 (74.2)	0.391
		Multi	59 (29.6)	140 (70.4)	

Table 26: Correlation of age and gravida with hypothyroidism

Sl.no.	Risk factor	Category	Hypothyroidism Present (%)	Hypothyroidism Absent (%)	p-value
1.	Age (years)	≥ 35	10 (34.5)	19 (65.5)	0.373
		< 35	96 (26.8)	262 (73.2)	
2.	Gravida	Primi	46 (24.1)	145 (75.9)	0.150
		Multi	60 (30.6)	136 (69.4)	

Table 27: Correlation of age and gravida with vitamin B12 deficiency

Sl.no.	Risk factor	Category	B12 deficiency Present (%)	B12 deficiency Absent (%)	p-value
1.	Age (years)	≥ 35	1 (3.4)	28 (96.6)	> 0.999
		< 35	23 (6.3)	341 (93.7)	
2.	Gravida	Primi	11 (5.7)	183 (94.3)	0.721
		Multi	13 (6.5)	186 (93.5)	

Table 28: Correlation of age and gravida with asthma

Sl.no.	Risk factor	Category	Asthma Present (%)	Asthma Absent (%)	p-value
1.	Age (years)	≥ 35	3 (10.3)	26 (89.7)	> 0.999
		< 35	38 (10.4)	326 (89.6)	
2.	Gravida	Primi	19 (9.8)	175 (90.2)	0.683
		Multi	22 (11.1)	177 (88.9)	

Table 29: Correlation of age and gravida with autoimmune disease

Sl.no.	Risk factor	Category	Autoimmune diseases Present (%)	Autoimmune diseases Absent (%)	p-value
1.	Age (years)	≥35	2 (6.9)	27 (93.1)	0.683
		<35	21 (5.8)	343 (94.2)	
2.	Gravida	Primi	9 (4.5)	185 (95.4)	0.312
		Multi	14 (7)	185 (93)	

Table 30: Correlation of age and gravida with infections during pregnancy

Sl.no.	Risk factor	Category	Infections Present (%)	Infections Absent (%)	p-value
1.	Age (years)	≥35	4 (13.8)	25 (86.2)	>0.999
		<35	57 (15.7)	307 (84.3)	
2.	Gravida	Primi	31 (16)	163 (84)	0.805
		Multi	30 (15.1)	169 (84.9)	

Table 31: Correlation of age and gravida with infertility

Sl.no.	Risk factor	Category	Infertility Present (%)	Infertility Absent (%)	p-value
1.	Age (years)	≥35	12 (41.4)	17 (58.6)	<0.001*
		<35	40 (11)	324 (89)	
2.	Gravida	Primi	32 (16.5)	162 (83.5)	0.059
		Multi	20 (10.1)	179 (89.9)	

41.4% of patients over the age of 35 years had history of treatment for infertility (p <0.001) (Table 31)

3. CORRELATION OF MEDICAL DISEASES WITH MATERNAL AND FOETAL OUTCOME

3a. Correlation of medical diseases with gestational age at delivery

58.3 % of patients with preeclampsia delivered preterm (<37 weeks of gestation) (p <0.001)

54.8% of patients with chronic hypertension delivered preterm (p <0.001)

66.7% of patients with autoimmune disease delivered preterm. (p <0.001)

There was no statistically significant correlation between the other medical diseases and gestational age at delivery. (Table 32a,32b)

Table 32a: Correlation of medical diseases with gestational age at delivery

Sl.no.	Risk factor	Category	Preterm (%)	Term (%)	p-value
1.	Gestational hypertension	Yes	3 (16.7)	15 (83.3)	0.578
		No	71 (24.6)	218 (75.4)	
2.	Preeclampsia	Yes	14 (58.3)	10 (41.7)	<0.001*
		No	60 (21.2)	223 (78.8)	
3.	Chronic hypertension	Yes	23 (54.8)	19 (45.2)	<0.001*
		No	51 (19.2)	214 (80.8)	
4.	Gestational diabetes	Yes	17 (22.7)	58 (77.3)	0.738
		No	57 (24.6)	175 (75.4)	
5.	Diabetes mellitus	Yes	2 (16.7)	10 (83.3)	0.737
		No	72 (24.4)	223 (75.6)	

Table 32b: Correlation of medical diseases with gestational age at delivery

Sl.no.	Risk factor	Category	Preterm (%)	Term (%)	p-value
6.	Anaemia	Yes	21 (21.2)	78 (78.8)	0.414
		No	53 (25.5)	155 (74.5)	
7.	Hypothyroidism	Yes	17 (22.1)	60 (77.9)	0.632
		No	56 (24.8)	170 (75.2)	
8.	Infections	Yes	11 (20)	44 (80)	0.490
		No	63 (25)	189 (75)	
9.	Asthma	Yes	3 (8.8)	31 (91.2)	0.027
		No	71 (26)	202 (74)	
10.	Vitamin B12 deficiency	Yes	3 (15.8)	16 (84.2)	0.580
		No	71 (24.7)	217 (75.3)	
11.	Autoimmune disease	Yes	12 (66.7)	6 (33.3)	<0.001*
		No	62 (21.5)	227 (78.5)	
12.	Infertility	Yes	13 (37.1)	22 (62.9)	0.055
		No	61 (22.4)	211 (77.6)	

3b. Correlation of medical diseases with foetal complication

41.7% of patients with preeclampsia developed foetal complications (p- 0.012). There is a statistically significant correlation of chronic hypertension with presence of foetal complications (p <0.001) (Table 33).

55.6% of patients with autoimmune disease developed foetal complications (p <0.001).

Table 33: Correlation of medical diseases with foetal complication

Sl.no.	Risk factor	Category	Foetal complication present (%)	Foetal complication absent (%)	p-value
1.	Gestational hypertension	Yes	4 (22.2)	14 (77.8)	0.761
		No	56 (19.4)	233 (80.6)	
2.	Preeclampsia	Yes	10 (41.7)	14 (58.3)	0.012*
		No	50 (17.7)	233 (82.3)	
3.	Chronic hypertension	Yes	17 (40.5)	25 (59.5)	<0.001*
		No	43 (16.2)	222 (83.8)	
4.	Gestational diabetes	Yes	13 (17.3)	62 (82.7)	0.620
		No	47 (20.3)	185 (79.7)	
5.	Diabetes mellitus	Yes	2 (16.7)	10 (83.3)	>0.999
		No	58 (19.7)	237 (80.3)	
6.	Anaemia	Yes	15 (15.2)	84 (84.8)	0.219
		No	45 (21.6)	163 (78.4)	
7.	Hypothyroidism	Yes	14 (18.2)	63 (81.8)	0.741
		No	45 (19.9)	181 (80.1)	
8.	Infections	Yes	13 (23.6)	42 (76.4)	0.453
		No	47 (18.7)	205 (81.3)	
9.	Asthma	Yes	2 (5.9)	32 (94.1)	0.033
		No	58 (21.2)	215 (78.8)	
10.	Vitamin B12 deficiency	Yes	2 (10.5)	17 (89.5)	0.387
		No	58 (20.1)	230 (79.9)	
11.	Autoimmune disease	Yes	10 (55.6)	8 (44.4)	<0.001*
		No	50 (17.3)	239 (82.7)	
12.	Infertility	Yes	11 (31.4)	24 (68.6)	0.060
		No	49 (18.0)	223 (82.0)	

3c. Correlation of medical diseases with birth weight

There is a statistically significant correlation of chronic hypertension ($p < 0.001$) and preeclampsia ($p = 0.002$) with low birth weight. (Table 34a)

Table 34a: Correlation of medical diseases with birth weight

Sl.no.	Risk factor	Category	LBW (<2.5 kg) (%)	Normal (\geq 2.5 kg) (%)	p-value
1.	Gestational hypertension	Yes	2 (11.1)	16 (88.9)	0.259
		No	71 (25.7)	205 (74.3)	
2.	Preeclampsia	Yes	12 (52.2)	11 (47.8)	0.002*
		No	61 (22.5)	210 (77.5)	
3.	Chronic hypertension	Yes	21 (53.8)	18 (46.2)	<0.001*
		No	52 (20.4)	203 (79.6)	
4.	Gestational diabetes	Yes	15 (20)	60 (80)	0.262
		No	58 (26.5)	161 (73.5)	
5.	Diabetes mellitus	Yes	5 (41.7)	7 (58.3)	0.180
		No	68 (24.1)	214 (75.9)	
6.	Anaemia	Yes	25 (25.5)	73 (74.5)	0.849
		No	48 (24.5)	148 (75.5)	

There was a statistically significant correlation of autoimmune disease with low birth weight ($p = 0.001$) (Table 34b). However number of patients with autoimmune disease who delivered during the study period were low (15 patients)

Table 34b: Correlation of medical diseases with birth weight

Sl.no.	Risk factor	Category	LBW (<2.5 kg) (%)	Normal (≥ 2.5 kg) (%)	p-value
7.	Hypothyroidism	Yes	18 (24.3)	56 (75.7)	0.846
		No	55 (25.5)	161 (74.5)	
8.	Infections	Yes	8 (15.7)	43 (84.3)	0.110
		No	65 (26.7)	178 (73.3)	
9.	Asthma	Yes	5 (14.7)	29 (85.3)	0.146
		No	68 (26.2)	192 (73.8)	
10.	Vitamin B12 deficiency	Yes	7 (36.8)	12 (63.2)	0.269
		No	66 (24)	209 (76)	
11.	Autoimmune disease	Yes	10 (66.7)	5 (33.3)	0.001*
		No	63 (22.6)	216 (77.4)	
12.	Infertility	Yes	13 (38.2)	21 (61.8)	0.054
		No	60 (23.1)	200 (76.9)	

3d. Correlation of medical diseases with mode of delivery

63.6% of patients with a risk factor of preeclampsia underwent lower segment caesarean section (LSCS) (p- 0.015) (Table 35) .

9 out of 12 patients with diabetes mellitus underwent LSCS. (p- 0.014)

Table 35: Correlation of medical diseases with mode of delivery

Sl.no.	Risk factor	Category	LSCS (%)	Vaginal (%)	p-value
1.	Gestational hypertension	Yes	10 (55.6)	8 (44.4)	0.144
		No	105 (38.2)	170 (61.8)	
2.	Preeclampsia	Yes	14 (63.6)	8 (36.4)	0.015*
		No	101 (37.3)	170 (62.7)	
3.	Chronic hypertension	Yes	19 (50)	19 (50)	0.146
		No	96 (37.6)	159 (62.4)	
4.	Gestational diabetes	Yes	27 (36.5)	47 (63.5)	0.573
		No	88 (40.2)	131 (59.8)	
5.	Diabetes mellitus	Yes	9 (75)	3 (25)	0.014*
		No	106 (37.7)	175 (62.3)	
6.	Anaemia	Yes	43 (43.9)	55 (56.1)	0.250
		No	72 (36.9)	123 (63.1)	
7.	Hypothyroidism	Yes	31 (41.9)	43 (58.1)	0.583
		No	82 (38.1)	133 (61.9)	
8.	Infections	Yes	21 (42)	29 (58)	0.662
		No	94 (38.7)	149 (61.3)	
9.	Asthma	Yes	10 (29.4)	24 (70.6)	0.212
		No	105 (40.5)	154 (59.5)	
10.	Vitamin B12 deficiency	Yes	6 (31.6)	13 (68.4)	0.479
		No	109 (39.8)	165 (60.2)	
11.	Autoimmune disease	Yes	7 (46.7)	8 (53.3)	0.546
		No	108 (38.8)	170 (61.2)	
12.	Infertility	Yes	18 (52.9)	16 (47.1)	0.082
		No	97 (37.5)	162 (62.5)	

DISCUSSION

BASELINE CHARACTERISTICS

The baseline characteristics and demographic data of this study group show that the average age was calculated to be 27.46 ± 4.9 years. 7.4 % patients were categorised as elderly gravida (age ≥ 35 years). In a study conducted by Pawde AA et al, women aged 35 years and above constituted 9.63% of the total study population.^[183] However in a study by Kunjam S et al, only 2.8% of the study population (n=500) were over the age of 36 years.^[184] The average age of the study population conducted by Rajput R et al. to study the prevalence of thyroid dysfunction was 23.79 ± 3.47 years.^[185] Hence our study population was older. In the National Vital Statistics Reports of 2008 in the United States, Women aged 25 to 29 years had the highest pregnancy rate, at 167.9 per 1,000 in 2008, closely followed by women aged 20 to 24 years, 163.0 per 1000.

[186]

ANTENATAL RISK FACTORS

28.5 % of patients had an antenatal risk factor of thyroid disorder which included both hypothyroidism and hyperthyroidism (hypothyroidism was present in 106 patients). Anaemia was present in 27.7% and gestational diabetes mellitus in 22.6% of the study population. Chronic hypertension was present in 14 % of patients. Gestational hypertension and preeclampsia was present in 5.3% and 6.4 % of patients respectively. Overt diabetes mellitus was present in 4.8% of patients.

In a random survey performed in various cities in India in 2002-2003, the prevalence of GDM was 16.2 per cent in Chennai, 15 per cent in Thiruvananthapuram, 21 per cent in Alwaye, 12 per cent in Bangalore, 18.8 per cent in Erode and 17.5 per cent in Ludhiana.^[187]

There were 3 patients who were HBsAg seropositive and one patient who was Human immunodeficiency virus seropositive.

HOSPITAL ADMISSIONS

29% of the total population required hospital admission during their pregnancy. 21% of patients were admitted in the Obstetric ward. 4% of the patients were admitted in the medical ward alone. 3% were admitted both in obstetrics and medical ward and 1% required admission under other specialities.

Infections: The most common medical reason for hospital admission was for the management of some type of infection (13). Of the thirteen patients' the most common diagnosis was urinary tract infection (5), pyelonephritis (1), symptomatic neurocysticercosis (1), tubercular meningitis (1), acute bronchitis (1), dengue with thrombocytopenia (1), lower respiratory tract infection (1) and viral fever (1).

Anaemia: Five patients were admitted for management of severe anaemia in pregnancy. One patient was diagnosed to have autoimmune haemolytic anaemia.

Hypertension: Four patients were admitted for the control of high blood pressure of which two patients had chronic hypertension. Two patients had preeclampsia

superimposed on chronic hypertension and one patient had Posterior reversible encephalopathy syndrome (PRES).

Cardiovascular diseases: Four patients were admitted for the management of cardiovascular disease namely pulmonary artery hypertension, paroxysmal tachycardia, coarctation of the aorta and Takayasu's arteritis.

Autoimmune disorders – The autoimmune disease were systemic lupus erythematosus with lupus nephritis (2 patients), undifferentiated connective tissue disease, Evans syndrome and antiphospholipid antibody syndrome.

In a study done by Ashakiran T. Rathod et al, out of the 765 obstetric admissions to ICU major conditions responsible were obstetric hemorrhage in 44.05 %, hypertensive disorders of pregnancy in 28.88 %, severe anemia in 14.37 %, heart disease in 12.15 %, and sepsis in 7.97 % of ICU cases.^[188]

In a study by Appinabhavi A et al, non-obstetric cause of ICU admission (26 cases) were pneumonia (11), sepsis (3), hepatitis (4), anesthetic complication (1), aplastic anemia (1), cerebrovascular events with seizures (2), meningitis (1), SLE (2) and angioneurotic edema(1).^[189]

PRIMARY OUTCOME

REASON FOR REFERRAL

Hypothyroidism: 22.1% patients were referred for the evaluation and management of hypothyroidism.

Hypertension: Sixty patients were referred for the management of high blood pressure. Of the 60 patients, 45 patients were diagnosed to have chronic hypertension at the clinic. Eleven patients were diagnosed to have gestational hypertension. One patient was admitted for further evaluation and was diagnosed to have coarctation of the aorta. This patient subsequently underwent medical termination of pregnancy. One patient was earlier diagnosed to have Takayasu's arteritis status post thoracic aortic stenting and was on Azathioprine.

In the study conducted by Sangeeta G et al hypertensive disorder was the commonest underlying cause for maternal mortality(37%).^[190] Prabhu TR et al studied the cerebrovascular complications in pregnancy and puerperium and found that hypertension emerged as an important risk factor.^[191] Bharti S et al noted that eclampsia, the occurrence of a seizure in association with preeclampsia, remains an important cause of maternal mortality and morbidity.^[192]

Hyperglycaemia: 41 patients were referred for control of blood sugar. 30 patients were diagnosed to have gestational diabetes mellitus and 11 patients were diagnosed to have pregestational diabetes mellitus. Of these patients, 2 patients required hospital admission for glycaemic control.

Fever: Among the 27 patients who presented with fever, twenty also had cough as an associated symptom. Eight patients were diagnosed to have upper respiratory tract infection, 2 patients were diagnosed to have atypical pneumonia. Two patients were diagnosed as pyrexia of unknown origin. Six patients had undifferentiated febrile

illness. Two patients were diagnosed to have urinary tract infection. Three patients were diagnosed as post viral bronchitis.

Referral for Expert opinion: Twenty three patients were referred for expert opinion namely for clearance for MDT for Hansen's disease, irregularly irregular pulse, for cardiovascular examination, absent peripheral pulses, Takayasu's arteritis, for titration of anticoagulation and for change over from warfarin to heparin. Other reasons were optimization of antiepileptic drugs, distal renal tubular acidosis, focal segmental glomerulosclerosis, Class IV lupus nephritis, evaluation of thrombocytopenia, HIV seropositive, HBsAg seropositive, latent syphilis, rheumatoid arthritis and old spine tuberculosis, old cortical vein thrombosis.

FREQUENCY OF MEDICAL DISORDERS DIAGNOSED IN OMC

The most common diagnosis was hypothyroidism (25%) followed by some type of infection (17.5%) and chronic hypertension was the third most common problem (13.4%). 49 patients were diagnosed to have gestational diabetes mellitus (12.4%).

Ajmani SN et al found that the prevalence of hypothyroidism and hyperthyroidism was 12% and 1.25% respectively in their study population.^[193]

In a study by Rajesh Rajput et al, GDM was diagnosed in 43 (7.1%) women based on ADA criteria.^[185] Zargar et al found the prevalence of GDM to be 3.8 per cent in Kashmiri women. In a random survey performed in various cities in India in 2002-2003, an overall GDM prevalence of 16.55 per cent was observed.^[187,194]

In another study done in Tamil Nadu, GDM was detected in 17.8 per cent women in urban, 13.8 per cent women in semiurban and 9.9 per cent women in rural areas.^[195]

TYPE OF INFECTIONS DIAGNOSED IN OBSTETRIC MEDICINE CLINIC

The most common type of infection diagnosed at this clinic was an upper respiratory tract infection (28 patients). Acute bronchitis, lower respiratory tract infection, influenza and atypical community acquired pneumonia constituted a significant number of patients (21 patients). Nine patients had acute undifferentiated febrile illness and 5 patients had urinary tract infection. Two patients were evaluated for pyrexia of unknown origin. One patient was detected to have right pleural effusion.

One patient was diagnosed to have tuberculoma and one patient had tubercular meningitis in our study population. Khadilkar SS et al conducted prospective observational study analysing 10 years' experience of pregnancies complicated by tuberculosis. He found that severity of the disease reduced over the years and was found mainly in seropositive patients. Pregnancy outcome was not adversely affected except for a very high incidence of low birth weight babies.^[196]

TYPE OF ANAEMIA DIAGNOSED IN OBSTETRIC MEDICINE CLINIC

Thirty eight patients (9.6% of the study population) were diagnosed to have anaemia in the clinic. 10 patients were diagnosed to have iron deficiency anaemia and 9 patients with B 12 deficiency. However in 11 patients the type of anaemia was unknown, since they did not follow up with investigations. Dimorphic anaemia was

present in 6 patients. Overall anaemia was present in 27 % of this study population at the time of delivery.

Shah AR et al found that the overall prevalence of anaemia in the studied women was observed to be 69.2% mostly in the second trimester of pregnancy. Only 72.6 % of the studied women had taken and consumed IFA tablets.^[197]

Maru L et al reported in their study that maximum number of cases of anaemia was reported in the third trimester, multigravidas and in emergency cases of the 20-25 years age group. Most common type of anaemia was found to be dimorphic anaemia.^[198]

TREATMENT RECEIVED IN OBSTETRIC MEDICINE CLINIC

Chronic hypertension: Out of the 55 patients, who were diagnosed to have chronic hypertension, 16 were advised home BP monitoring, 24 patients were on single antihypertensive and 3 patients required three antihypertensives for blood pressure control. The most common drug used was Labetalol followed by Nifedipine, Alphamethyldopa and Hydralazine.

In a study by Babbar K et al it was found that labetalol and nifedipine had decreased association from maternal and fetal side effects and comparatively better hypotensive action. Labetalol was safer, quicker in achieving adequate control of blood pressure with considerable prolongation of the duration of pregnancy with fewer side effects on the mother as well as the neonate.^[199]

Use of low dose Aspirin in Patients at risk for developing preeclampsia:

According to the SOGC guidelines 2014, patients at risk for preeclampsia need to be initiated on low dose aspirin. The U.S. Preventive Services Task Force (USPSTF) recommends the use of low-dose aspirin (81 mg/d) as preventive medication after 12 weeks of gestation in women who are at high risk for preeclampsia.

In our study there were 100 patients with any of the above risk factors. 54 patients were on low dose aspirin and 46 were not on.

Patients with recurrent hypertensive disorder: In our population, 38 patients had hypertension detected in their previous pregnancy. Out of which 50% was diagnosed with chronic hypertension in the present pregnancy.

In a study by Surapaneni T et al, one in four pregnant women with preeclampsia developed recurrence in their subsequent pregnancies.^[200]

OVERALL MATERNAL AND FOETAL OUTCOME

Out of the 393 patients, 78 patients were yet to deliver at the end of the study period. Outcome data could be gathered for only 307 patients. Eight patients could not be contacted and were lost to follow up. The mean gestational age at delivery for the 307 patients was 36.75 ± 4.6 weeks. 37.4% patients (115 patients) in this study underwent caesarean delivery. In the National vital statistics report 2015, in the United States the caesarean delivery rate was 32%.^[201]

Maternal complications were present in 37 patients. The single most common maternal complication was postpartum haemorrhage which was present in 9 patients.

This was followed by urinary tract infections (8 patients) and postpartum fever in 6 patients. There were no maternal deaths. The mean birth weight was calculated on 294 patients which was 2.8 ± 0.596 kg. Birth weight data was not available for 13 deliveries since these were 1st or 2nd trimester abortions. There were 16 still births or abortions among the 307 patients.

Gestational Age at Delivery

There were 291 patients who had live births. 80% patients delivered at term and the rest were preterm.

Bad Foetal Outcome

There were 16 abortions and 1 neonatal death among the 307 patients who delivered. The mean age of the patient was 26.19 years with standard deviation of 3.67 years. Nine patients were in their first pregnancy. Four patients had prior abortions.

In a study by Deepti Singh et al, the hazard ratio of having a spontaneous abortion was six times ($HR = 5.7, P < 0.01$) more among the women who had a spontaneous abortion in a previous pregnancy outcome than those who had a live birth as a previous pregnancy outcome ($HR = 1.00$).^[202]

Causes for Medical Termination of Pregnancy

Out of 16 foetal deaths, 7 were medical termination of pregnancy for the following reasons.

1. SLE Class IV Lupus nephritis with autoimmune haemolytic anaemia and posterior reversible encephalopathy syndrome (15 weeks)

2. Chronic hypertension with severe preeclampsia, HELLP syndrome (26 weeks)
3. Coarctation of the aorta (11 weeks)
4. Takayasu's arteritis (13 weeks)
5. Adult onset nephrotic syndrome (18 weeks)
6. Prelabour premature rupture of membranes (19 weeks)
7. Holoprosencephaly (20 weeks)

Intrauterine deaths

Two patients presented to OMC at 26 weeks and 29 weeks with respiratory tract symptoms and were diagnosed to have upper respiratory infection and viral bronchitis respectively. They were treated symptomatically. Both these patients had no significant antenatal risk factors or past medical illness. They presented with intrauterine death at 28 weeks and 32 weeks.

One patient came for evaluation of pyrexia of unknown origin at 20 weeks and was advised admission, however was not willing. She was noted to have two prior abortions and one live issue with ectodermal dysplasia. She was diagnosed with intrauterine death at 32 weeks elsewhere.

One patient was previously diagnosed with APLA syndrome, secondary Evans syndrome, chronic hypertension and hypothyroidism. She presented at 13 weeks of gestation for evaluation of thrombocytopenia. She was advised to continue antihypertensive, hydroxychloroquine, low molecular weight heparin, corticosteroid, human immunoglobulin and thyroxine. However she also presented with an intrauterine death (27 weeks of gestation).

Two patients who were noted to have missed abortions (7 weeks and 18 weeks) were earlier diagnosed to have hypothyroidism and were on thyroxine.

SECONDARY OUTCOMES

CORRELATION OF AGE, GRAVIDA AND FAMILY HISTORY WITH MEDICAL DISORDERS IN PREGNANCY

25.2% of patients with a family history of hypertension (1st degree relative) were found to have chronic hypertension ($p < 0.001$). 12.6% of patients with family history of hypertension developed preeclampsia ($p = 0.003$). 30.5% of patients with family history of diabetes mellitus were noted to have gestational diabetes mellitus ($p = 0.01$). There is statistically significant correlation of family history of diabetes mellitus and pregestational diabetes ($p < 0.001$). There is no correlation of family history of hypertension with gestational hypertension ($p = 0.323$).

In a study by Rajesh Rajput et al, a significantly higher per cent of women with GDM had positive family history of diabetes mellitus. Seshiah et al observed a significant association between the family history of diabetes mellitus and the occurrence of GDM among pregnant women.^[185]

SG Kumar et al in a case control study, found that family history of hypertension (OR- 5.4), history of pregnancy induced hypertension in earlier pregnancy (OR- 9.63), were significantly associated with preeclampsia.^[203]

In our study there was no statistically significant correlation between age (≥ 35 years) or gravida (primigravida) and presence or absence of chronic hypertension. There is

no statistically significant correlation between age (≥ 35 years) and gravida (primigravida/multigravida) and presence or absence of preeclampsia and gestational hypertension.

In the study done by SG Kumar et al, age group was not found to be significantly associated with preeclampsia.^[203] In a study by Kunjam S et al in Rajasthan, 74.1% of patients with gestational diabetes mellitus were above the age of 25 years.^[184]

There is no statistically significant correlation between age (> 35 years) or gravida (primigravida/multigravida) and presence or absence of gestational diabetes mellitus (GDM).

There was no statistically significant correlation of age (≥ 35 years) and gravida (primigravida) with anaemia, hypothyroidism, B12 deficiency, asthma, autoimmune disease or infections. 41.4% of patients over the age of 35 years had history of treatment for infertility ($p < 0.001$)

CORRELATION OF MEDICAL DISEASES WITH MATERNAL AND FOETAL OUTCOME

1. GESTATIONAL AGE AT DELIVERY

In this study we found that, 58.3 % of patients with preeclampsia delivered preterm (< 37 weeks of gestation) ($p < 0.001$). 54.8% of patients with chronic hypertension delivered preterm ($p < 0.001$) 66.7% of patients with autoimmune disease delivered preterm. ($p < 0.001$). There was no statistically significant correlation between the other medical diseases and gestational age at delivery.

2. FOETAL COMPLICATION

41.7% of patients with preeclampsia developed foetal complications (p- 0.012). There is a statistically significant correlation of chronic hypertension with presence of foetal complications (p <0.001). 55.6% of patients with autoimmune disease developed foetal complications (p <0.001)

3. LOW BIRTH WEIGHT

There is a statistically significant correlation of chronic hypertension (p <0.001) and preeclampsia (p- 0.002) with low birth weight. There was a statistically significant correlation of autoimmune disease with low birth weight (p- 0.001). However only 15 patients with autoimmune disease delivered during the study period. There was no statistically significant correlation of gestational diabetes, diabetes mellitus, anaemia, hypothyroidism, infections, asthma, vitamin B12 deficiency and infertility

There was no statistically significant correlation of anaemia with low birth weight in this study. Studies show a significantly higher risk of LBW and preterm birth with anaemia in the first or second trimester.^[204]

In A study by S R. A. Odegard et al, severe and early onset preeclampsia was associated with significant fetal growth restriction. The risk of having an SGA infant was dramatically higher in women with recurrent preeclampsia.^[205]

4. MODE OF DELIVERY

63.6% of patients with a risk factor of preeclampsia underwent lower segment caesarean section (LSCS). (p- 0.015). 9 out of 12 patients with diabetes mellitus underwent LSCS. (p- 0.014)

A. M. Panaitesc et al conducted a cohort study in a population of 109,932 pregnancies, which included 1417 (1.3%) women with chronic hypertension. After adjusting for potential confounding variables from maternal characteristics, medical and obstetric history, chronic hypertension was associated with increased risk of stillbirth, preeclampsia, small for gestational age, GDM, iatrogenic preterm birth (< 37 weeks) and elective caesarean delivery.^[206]

The caesarean delivery rate in the pregestational diabetes mellitus group was significantly higher than the control group in a study conducted in China by Chen HT et al.^[207]

LIMITATIONS

The limitations of this study were the following

1. This is an observational study. There was no randomization or intervention done to assess the difference in the outcome measures.
2. Controls were not recruited. If the pregnant cohort were compared with age matched individuals who were not referred to the obstetric medicine clinic, the significance of the outcome and associations could have been described more objectively.
3. The patients were only followed up at the time they came for review in the obstetric medicine clinic. Other complications or illness for which the patient sought medical care elsewhere were not recorded. Knowing this would have helped understand its impact on maternal and final foetal outcome.
4. Treatment advised at this clinic may have been modified in case the patient was referred to other specialities for the same reason. This could have modified the outcomes.
5. A larger community based study would help in finding the actual incidence of the common medical illnesses in the community. As this is a tertiary care hospital, the disease representation may not reflect the actual population's disease spectrum due to a referral bias.

CONCLUSION

This study describes the clinical profile of patients attending the obstetric medicine clinic at a tertiary care centre in south India.

The conclusions of this study are as follows

1. The mean age of our study population was 27 years, which was older in comparison to what is seen in Indian literature on pregnant women.
2. The most common reason for referral to the obstetric medicine clinic was for the evaluation and management of hypothyroidism.
3. The other common reasons were for evaluation of respiratory tract symptoms, cardiac symptoms such as breathlessness, control of blood pressure and blood sugar.
4. The most common medical disorder diagnosed in the clinic was hypothyroidism followed by infections, chronic hypertension and gestational diabetes mellitus.
5. The other significant medical illnesses were asthma, anaemia, autoimmune disease such as systemic lupus erythematosus, APLA syndrome, Takaysu's arteritis and coarctation of the aorta.
6. Rare diseases were tuberculosis (tubercular meningitis and tuberculoma), hyperthyroidism and renal disease such as chronic kidney disease and distal renal tubular acidosis.

7. 28% of the study population required hospital admission for various reasons.
7% of patients required admission under General Medicine for the management of infections, hypertension and autoimmune disease.
8. 41% of patients above the age of 35 years were treated for infertility which was statistically significant. There was no significant correlation of age with the other common medical illnesses.
9. Out of the 393 patients who were recruited to this study over an 11 month period, maternal and foetal outcome was available for 307 patients. The mean gestational age at delivery was 36 weeks. The mean birth weight was 2.8 kg and 57% patients delivered vaginally.
10. Maternal complications were present in 37 patients. The single most common maternal complication was postpartum haemorrhage. There were no maternal deaths.
11. Foetal complications were seen in 60 patients. There were 16 abortions and 1 neonatal death. Seven of these pregnancies had to be medically terminated.
Two patients had presented to the clinic in the 2nd trimester with a respiratory tract infection.
12. Chronic hypertension had a statistically significant correlation with preterm delivery, foetal complication and low birth weight.
13. The Obstetric Medicine clinic at this hospital helps cater to a large proportion of patients requiring urgent expert opinion on the various medical disorders complicating pregnancy. This will enable early targeted intervention resulting in reduced maternal morbidity and mortality.

SUGGESTIONS FOR FUTURE RESEARCH

1. A larger study which is community based will enable us to ascertain the true incidence of the various medical disorders in pregnancy.
 2. Follow up of the patients who attended the clinic over several months postpartum, would enable us to access the long term impact of medical diseases in pregnancy.
 3. To undertake a randomized trial with matched controls of patients with specific medical illnesses complicating pregnancy and to investigate its impact on maternal and foetal outcome in the south Indian population.
 4. The role of the obstetric physician in a tropical country like India also includes care of patients with infectious diseases. Guidelines for care of pregnant women with infections have to be drawn separately in the context of local epidemiology.
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BIBLIOGRAPHY

1. AbouZahr. C, and T. Wardlaw, ‘Maternal Mortality at the End of the Decade: What signs of progress?’, *Bulletin of the World Health Organization*, vol. 79, no. 6, 2001, pp. 561–573.
2. WHO, UNICEF, UNFPA and The World Bank, *Trends in Maternal Mortality: 1990 to 2015*, WHO, Geneva, 2015.
3. Tabassum Firoz, Oier Ateka-Barrutia, Jose Antonio Rojas-Suarez, Chandrika Wijeyaratne, Eliana Castillo, Hennie Lombaard, and Laura A Magee. *Global obstetric medicine: Collaborating towards global progress in maternal health. Obstetric Medicine*. 2015 Sep; 8(3): 138–145.
4. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller AB, Daniels J, Gülmezoglu AM, Temmerman M, Alkema L. *Global causes of maternal death: a WHO systematic analysis. Lancet Glob Health*. 2014 Jun; 2(6):e323-33.
5. Julia Hussein. *Non-communicable diseases during pregnancy in low and middle income countries. Obstetric Medicine* 10, no.1, 2016 December: 26–29.
6. Adam D Jakes, Ingrid Watt-Coote et al. *Obstetric medical care and training in the United Kingdom. Obstetric Medicine*. 2016 December: 1-3.
7. Peter von Dadelszen, Laura A Magee. *Strategies to reduce the global burden of direct maternal deaths. Obstetric Medicine*, vol. 10, 2017 January; 1:5-9.
8. Paily VP, Ambujam K et al. *Confidential Review of Maternal Deaths in Kerala: a country case study. BJOG*. 2014 September. 121 Suppl 4:61-66.
9. *Maternal Death Review, Country perspective*, Ministry of health and family welfare, Government of India 2012.
10. Ajay Halder, Reeta Vijayselvi and Ruby Jose. *Changing perspectives of infectious causes of maternal mortality. Journal of Turkish German Gynecological Assoc*. 2015.16(4):208-213.
11. Sowmya Sathyendra, Sudha Jasmine Rajan, Santhosh Benjamin, Ritavijayaselvi, Annie Reji. *Experiences from an Obstetric Medicine Unit, Christian Medical College, Vellore*, June 2015.
12. Khan, Khalid S., et al., ‘WHO Analysis of Causes of Maternal Death: A systematic review’, *Lancet*, vol. 367, no. 9516, 1 April 2006, pp. 1066–1074.
13. Montgomery AL, Ram U, Kumar R, Jha P. *Maternal Mortality in India: Causes and Healthcare Service Use Based on a Nationally Representative Survey. The Million Death Study Collaborators (2014) PLoS ONE* 9(1): e83331.

14. Torres LM, Rhenals AL, Jiménez A, Ramírez-Villalobos D, Urióstegui R, Piña M, et al. [Intentional search and reclassification of maternal deaths in Mexico: The effect on the distribution of causes]. *SaludPublica Mex.* 2014 Jul-Aug;56(4):333–47.
15. Menendez C et al. 2008. An autopsy study of maternal mortality in Mozambique: The contribution of infectious diseases. *PLoS Medicine* 5(2):0220–0226.
16. Study on Causes of Death by Verbal Autopsy in India, Indian Council Of Medical Research www.icmr.nic.in/final/causes_death/NCD.pdf.
17. Imdad A, Bhutta ZA. Effect of balanced protein energy supplementation during pregnancy on birth outcomes. *BMC Public Health* 2011;11:S17.
18. Goonewardene M, Shehata M, Hamad A. Anaemia in pregnancy. *Best Pract Res ClinObstetGynaecol* 2012;26:3-24.
19. Haider BA, Olofin I, Wang M, et al. Anaemia, prenatal iron use, and risk of adverse pregnancy outcomes: systematic review and meta-analysis. *BMJ* 2013;346:f3443.
20. Imdad A, Bhutta ZA. Routine iron/folate supplementation during pregnancy: effect on maternal anaemia and birth outcomes. *PaediatrPerinatEpidemiol* 2012;26:168-77.
21. Nassar N, Halligan GH, Roberts CL, et al. Systematic review of first-trimester vitamin D normative levels and outcomes of pregnancy. *Am J ObstetGynecol* 2011;205:208.
22. Yajnik CS, Deshpande SS, Jackson AA, et al. Vitamin B12 and folate concentrations during pregnancy and insulin resistance in the offspring: the Pune Maternal Nutrition Study. *Diabetologia* 2008;51:29-38.
23. Heslehurst N, Simpson H, Ells LJ, et al. The impact of maternal BMI status on pregnancy outcomes with immediate short-term obstetric resource implications: a meta-analysis. *Obes Rev* 2008; 9:635-83.
24. Robinson HE, O'Connell CM, Joseph KS et al. Maternal outcomes in pregnancies complicated by obesity. *ObstetGynecol* 2005; 106: 1357–1364.
25. International Diabetes Federation IDF Atlas 6th Edi. Brussels, Belgium International Diabetes Federation; 2013.
26. Jiwani A, Marseille E, Lohse N, et al. Gestational diabetes mellitus: results from a survey of country prevalence and practices. *J Matern Fetal Neonat Med* 2012;25:600-10.
27. World Diabetes Foundation:Global Alliance for Women's Health. Diabetes, women, and development. Meeting, expert recommendations for policy action, conclusions, and follow-up actions. *Int J Gynecol&Obstet* 2009; 104:S46-50.
28. Hartling L, Dryden DM, Guthrie A, et al. Benefits and harms of treating gestational diabetes mellitus: a systematic review and meta-analysis for the U.S. Preventive Services Task Force and the National Institutes of Health Office of Medical Applications of Research. *Ann Intern Med* 2013; 159:123.
29. Catalano PM, McIntyre HD, Cruickshank JK, et al. The hyperglycemia and adverse pregnancy outcome study: associations of GDM and obesity with pregnancy outcomes. *Diabetes Care* 2012; 35:780.

30. Han S, Crowther CA, Middleton P. Interventions for pregnant women with hyperglycaemia not meeting gestational diabetes and type 2 diabetes diagnostic criteria. *Cochrane Database Syst Rev* 2012; 1:CD009037.
31. Food and Nutrition Board, Institute of Medicine: U.S. Dietary Reference Intakes: Energy, Carbohydrates, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. Washington, DC, National Academies Press, 2002.
32. Tranquilli AL, Dekker G, Magee L, et al. The classification, diagnosis and management of the hypertensive disorders of pregnancy: A revised statement from the ISSHP. *Pregnancy Hypertens.* 2014;4(2): 97–104.
33. Mol BW, Roberts CT, Thangaratinam S, et al. Pre-eclampsia. *Lancet* 2015 September 2.
34. Steegers EA, von Dadelszen P, Duvekot JJ, et al. Pre-eclampsia. *Lancet* 2010 August 21;376(9741):631-44.
35. Kassebaum NJ, Bertozzi-Villa A, Coggeshall MS, et al. Global, regional, and national levels and causes of maternal mortality during 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet* 2014 September 13;384(9947):980-1004.
36. Lawn JE, Blencowe H, Waiswa P, et al. Stillbirths: rates, risk factors, and acceleration towards 2030. *Lancet* 2016 February 6;387(10018):587-603.
37. Vogel JP, Souza JP, Mori R, et al. Maternal complications and perinatal mortality: findings of the World Health Organization multicountry survey on maternal and newborn health. *BJOG* 2014 March;121(Suppl. 1):76-88.
38. Lawn JE, Blencowe H, Oza S, et al. Every newborn: progress, priorities, and potential beyond survival. *Lancet* 2014 July 12;384(9938):189-205.
39. American College of Obstetricians and Gynecologists, Task Force on Hypertension in Pregnancy. Hypertension in pregnancy: report of the American College of Obstetricians and Gynecologists' Task Force on Hypertension in Pregnancy *Obstet Gynecol.* 2013;122(5): 1122–1131.
40. Bramham K, Parnell B, Nelson-Piercy C, Seed PT, Poston L, Chappell LC. Chronic hypertension and pregnancy outcomes: systematic review and meta-analysis. *BMJ.* 2014;348:g2301.
41. Chappell LC, Enye S, Seed P, Briley AL, Poston L, Shennan AH. Adverse perinatal outcomes and risk factors for preeclampsia in women with chronic hypertension: a prospective study. *Hypertension.* 2008;51: 1002–1009.
42. National Collaborating Centre for Women's and Children's Health (UK). Hypertension in Pregnancy: The Management of Hypertensive Disorders During Pregnancy. London, UK: RCOG Press; 2010.
43. Magee LA, Pels A, Helewa M, Rey E, von Dadelszen P; Hypertension Guideline Committee. Diagnosis, evaluation, and management of the hypertensive disorders of pregnancy: executive summary *J Obstet Gynaecol Can.* 2014;36(5):416–441.
44. Department of Reproductive Health, Department of Maternal, Newborn, Child and Adolescent Health, Department of Nutrition for Health and Development, World

- Health Organization. WHO Recommendations for Prevention and Treatment of Pre-eclampsia and Eclampsia. Geneva, Switzerland: World Health Organization; 2011.
45. Bujold E, Roberge S, Lacasse Y, et al. Prevention of preeclampsia and intrauterine growth restriction with aspirin started in early pregnancy: a meta-analysis. *Obstet Gynecol.* 2010;116(2 Pt 1):402–414.
 46. Villa PM, Kajantie E, Räikkönen K, et al. Aspirin in the prevention of pre-eclampsia in high-risk women: a randomised placebo-controlled PREDO Trial and a meta-analysis of randomised trials. *BJOG.* 2013;120(1):64–74.
 47. Thangaratnam S, Langenveld J, Mol BW, Khan KS. Prediction and primary prevention of pre-eclampsia. *Best Pract Res Clin Obstet Gynaecol.* 2011;25(4):419–433.
 48. Villar J, Abdel-Aleem H, Merialdi M, et al. World Health Organization randomized trial of calcium supplementation among low calcium intake pregnant women. *Am J Obstet Gynecol.* 2006;194(3):639–649.
 49. Kwon HL, Triche EW, Belanger K, Bracken MB. The epidemiology of asthma during pregnancy: prevalence, diagnosis, and symptoms. *Immunol Allergy Clin North Am* 2006;26:29-62.
 50. Bahna SL, Bjerkedal T. The course and outcome of pregnancy in women with bronchial asthma. *ActaAllergol* 1972;27:397-406.
 51. Demissie K, Breckenridge MB, Rhoads GG. Infant and maternal outcomes in the pregnancies of asthmatic women. *Am JRespirCrit Care Med* 1998;158:1091-5.
 52. Kallen B, Rydhstroem H, Aberg A. Asthma during pregnancy — a population based study. *Eur J Epidemiol* 2000;16:167-71.
 53. Wen SW, Demissie K, Liu S. Adverse outcomes in pregnancies of asthmatic women: results from a Canadian population. *AnnEpidemiol* 2001;11:7-12.
 54. Liu S, Wen SW, Demissie K, Marcoux S, Kramer MS. Maternal asthma and pregnancy outcomes: a retrospective cohort study. *Am J ObstetGynecol* 2001;184:90-6.
 55. Enriquez R, Griffin MR, Carroll KN, et al. Effect of maternal asthma and asthma control on pregnancy and perinatal outcomes. *J Allergy ClinImmunol* 2007;120:625-30.
 56. Tamasi L, Somoskovi A, Muller V, et al. A population-based case-control study on the effect of bronchial asthma during pregnancy for congenital abnormalities in the offspring. *J Asthma* 2006;43:81-6.
 57. Kallen B, OtterbladOlausson P. Use of anti-asthmatic drugs during pregnancy. 3. Congenital malformations in the infants. *Eur J ClinPharmacol* 2007;63:383-8.
 58. Breton MC, Beauchesne M-F, Lemiere C, Rey E, Forget A, Blais L. Risk of perinatal mortality associated with asthma during pregnancy. *Thorax* 2009;64:101-6.
 59. Schatz M, Zeiger RS, Hoffman CP. Intrauterine growth is related to gestational pulmonary function in pregnant asthmatic women. *Chest* 1990;98:389-92.
 60. Bracken MB, Triche EW, Belanger K, Saflas A, Beckett WS, Leaderer BP. Asthma symptoms, severity, and drug therapy: a prospective study of effects on 2205 pregnancies. *ObstetGynecol* 2003;102: 739-52.

61. Bakhireva LN, Schatz M, Jones KL, Chambers CD. Asthma control during pregnancy and the risk of preterm delivery or impaired fetal growth. *Ann Allergy Asthma Immunol* 2008;101:137-43.
62. Schatz M, Dombrowski MP, Wise R, et al. Spirometry is related to perinatal outcomes in pregnant women with asthma. *Am J ObstetGynecol* 2006;194:120-6.
63. Murphy VE, Clifton VL, Gibson PG. Asthma exacerbations during pregnancy: incidence and association with adverse pregnancy outcomes. *Thorax* 2006;61:169-76.
64. Gluck JC, Gluck PA. The effect of pregnancy on the course of asthma. *Immunol Allergy Clin North Am* 2006;26:63-80.
65. Schatz M, Dombrowski MP, Wise R, et al. Asthma morbidity during pregnancy can be predicted by severity classification. *J Allergy ClinImmunol* 2003;112:283-8.
66. Simpson JC, Macfarlane JT, Watson J, et al. A national confidential enquiry into community acquired pneumonia deaths in young adults in England and Wales. *Thorax* 2000;55:1040-5.
67. Kaunitz AM, Hughes JM, Grimes DA, et al. Causes of maternal mortality in the United States. *ObstetGynecol* 1985;65:605-12.
68. Baley JE, Schacter BZ. Mechanisms of diminished natural killer cell activity in pregnant women and neonates. *J Immunol* 1985;134:3042-8.
69. Bulmer R, Hancock KW. Depletion of circulating T lymphocytes in pregnancy. *ClinExpImmunol* 1977;28:302-5.
70. Chardonens X, Jeannet M. Lymphocyte-mediated cytotoxicity and humoral antibodies in human pregnancy. *Int Arch Allergy ApplImmunol* 1980;61:467-71.
71. Lederman MM. Cell-mediated immunity and pregnancy. *Chest* 1984;86:6-9S.
72. Sridama V, Pacini F, Yang SL, et al. Decreased levels of helper T cells: a possible cause of immunodeficiency in pregnancy. *N Engl J Med* 1982;307:352-6.
73. Nyhan D, Quigley C, Bredin CP. Acute respiratory failure in pregnancy due to staphylococcal pneumonia. *Ir Med J* 1983;76:320-1.
74. MacLennan FM. Maternal mortality from Mendelson's syndrome: an explanation? *Lancet* 1986;i:587-9.
75. Finland M, Dublin TD. Pneumococcal pneumonias complicating the pregnancy and puerperium. *JAMA* 1939;250: 1027-32.
76. Hopwood HG. Pneumonia in pregnancy. *ObstetGynecol* 1965;25:875-9.
77. Benedetti TJ, Valle R, Ledger WJ. Antepartum pneumonia in pregnancy. *Am J ObstetGynecol* 1982;144:413-7.
78. Madinger NE, Greenspoon JS, Ellrodt AG. Pneumonia during pregnancy: has modern technology improved maternal and fetal outcome? *Am J ObstetGynecol* 1989;161:657-62.
79. Berkowitz K, LaSala A. Risk factors associated with the increasing prevalence of pneumonia during pregnancy. *Am J ObstetGynecol* 1990;163:981-5.
80. Richey SD, Roberts SW, Ramin KD, et al. Pneumonia complicating pregnancy. *ObstetGynecol* 1994;84:525-8.
81. Yost NP, Bloom SL, Richey SD, et al. An appraisal of treatment guidelines for antepartum community-acquired pneumonia. *Am J ObstetGynecol* 2000;183:131-5.

82. Visscher HC, Visscher RD. Indirect obstetric deaths in the state of Michigan 1960–1968. *Am J ObstetGynecol* 1971;109:1187–96.
83. British Thoracic Society and Public Health Laboratory Service. Community-acquired pneumonia in adults in British hospitals in 1982–1983: a survey of aetiology, mortality, prognostic factors and outcome. *Q J Med* 1987;62: 195–220.
84. Marrie TJ, Peeling RW, Fine MJ, et al. Ambulatory patients with community-acquired pneumonia: the frequency of atypical agents and clinical course. *Am J Med* 1996;101: 508–15.
85. Munn MB, Groome LJ, Atterbury JL, et al. Pneumonia as a complication of pregnancy. *J MaternFetal Med* 1999;8:151–4.
86. Tewari K, Wold SM, Asrat T. Septic shock in pregnancy associated with legionella pneumonia: case report. *Am J ObstetGynecol* 1997;176:706–7.
87. McKinney WP, Volkert P, Kaufman J. Fatal swine influenza pneumonia during late pregnancy. *Arch Intern Med* 1990;150:213–5.
88. Hollingsworth HM, Pratter MR, Irwin RS. Acute respiratory failure in pregnancy. *J Intensive Care Med* 1989;4:11– 34.
89. Larsen JW Jr. Influenza and pregnancy. *ClinObstetGynecol* 1982;25:599–603.
90. Pramanick A, Rathore S, Peter JV, Moorthy M, Lionel J. Pandemic (H1N1) 2009 virus infection during pregnancy in South India. *Int J Gynecol Obstet*. 2011 Apr;113(1):32–5.
91. Wallace JM, Rao AV, Glassroth J, et al. Respiratory illness in persons with human immunodeficiency virus infection. The Pulmonary Complications of HIV Infection Study Group. *Am Rev Respir Dis* 1993;148:1523–9.
92. Hirschtick RE, Glassroth J, Jordan MC, et al. Bacterial pneumonia in persons infected with the human immunodeficiency virus. Pulmonary Complications of HIV Infection Study Group. *N Engl J Med* 1995;333:845–51.
93. Baril L, Astagneau P, Nguyen J, et al. Pyogenic bacterial pneumonia in human immunodeficiency virus-infected inpatients: a clinical, radiological, microbiological, and epidemiological study. *Clin Infect Dis* 1998;26:964–71.
94. Wallace JM, Hansen NI, Lavange L, et al. Respiratory disease trends in the Pulmonary Complications of HIV Infection Study cohort. Pulmonary Complications of HIV Infection Study Group. *Am J RespirCrit Care Med* 1997;155:72–80.
95. Afessa B, Green B. Bacterial pneumonia in hospitalized patients with HIV infection. The pulmonary complications, ICU support, and prognostic factors of hospitalized patients with HIV(PIP) study. *Chest* 2000;117:1017–22.
96. WHO. Tuberculosis in women. 2011. Accessed at, http://www.who.int/tb/publications/tb_women_factsheet_251013.pdf
97. Carter EJ, Mates S. Tuberculosis during pregnancy. The Rhode Island experience, 1987 to 1991. *Chest* 1994;106(5):1466-70: characteristics and delivery rates. *Am J ObstetGynecol* 2003;188(2):549-52.
98. Jacqueline.E.A.K Bamfo / Best Practice & Research Clinical Obstetrics and Gynaecology 27 (2013) 583–595.

99. Kramer HM, Schutte JM, Zwart JJ et al. Maternal mortality and severe morbidity from sepsis in the Netherlands. *ActaObstetGynecolScand* 2009; 88: 647–653.
100. Neeman R, Keller N, Barzilai A et al. Prevalence of internalisation-associated gene, *prtF1*, among persisting group-A streptococcus strains isolated from asymptomatic carriers. *Lancet* 1998; 352: 1974–1977.
101. Cantwell R, Clutton-Brock T, Cooper G, et al. Saving Mothers' Lives: Reviewing maternal deaths to make motherhood safer: 2006–2008. The Eighth Report of the Confidential Enquiries into Maternal Deaths in the United Kingdom. *BJOG*. 2011;118(Suppl 1):1–203.
102. Robinson HE, O'Connell CM, Joseph KS et al. Maternal outcomes in pregnancies complicated by obesity. *ObstetGynecol* 2005; 106: 1357–1364.
103. The Organisation for Economic Co-operation and Development. Health at a glance 2011: OECD indicators. Paris: The Organisation for Economic Co-operation and Development (OECD), 2011, <http://www.oecd.org/health/healthataglance> [last accessed 05.04.13].
104. Declercq E, Menacker F & MacDorman M. Rise in 'no indicated risk' primary caesareans in the United States, 1991–2001: cross sectional analysis. *BMJ* 2005; 330: 71–72.
105. Declercq E, Barger M, Cabral HJ et al. Maternal outcomes associated with planned primary cesarean births compared with planned vaginal births. *ObstetGynecol* 2007; 109: 669–677.
106. Gibbs RS. Clinical risk factors for puerperal infection. *ObstetGynecol* 1980; 55(5 Suppl): 178S–184S.
107. Leth RA, Moller JK, Thomsen RW et al. Risk of selected postpartum infections after cesarean section compared with vaginal birth: a five-year cohort study of 32,468 women. *ActaObstetGynecolScand* 2009; 88: 976–983.
108. Chang PL & Newton ER. Predictors of antibiotic prophylactic failure in post-cesarean endometritis. *ObstetGynecol* 1992; 80: 117–122.
109. Olsen MA, Butler AM, Willers DM et al. Risk factors for surgical site infection after low transverse cesarean section. *Infect Control HospEpidemiol* 2008; 29: 477–484. Discussion 85–86.
110. Killian CA, Graffunder EM, Vinciguerra TJ et al. Risk factors for surgical-site infections following cesarean section. *Infect Control HospEpidemiol* 2001; 22: 613–617.
111. Negro R, Mestman JH. Thyroid disease in pregnancy. Best practice & research. *Clinical endocrinology & metabolism*. 2011 Dec;25(6):927-43.
112. Krassas GE, Poppe K, Glinoer D. Thyroid function and human reproductive health. *Endocrine Reviews* 2010; 31: 702-755.
113. Gaberšček S, Zaletel K. Thyroid physiology and autoimmunity in pregnancy and after delivery. *Expert review of clinical immunology* 2011 Sep;7(5):697-706; quiz 707.
114. Soldin OP, Tractenberg RE, Hollowell JG et al. Trimester-specific changes in maternal thyroid hormone, thyrotropin, and thyroglobulin concentrations during

- gestation: trends and associations across trimesters in iodine sufficiency. *Thyroid* 2004; 14: 1084-1090.
115. Negro R. Significance and management of low TSH in pregnancy. In Lazarus J, Pirags V, Butz S (eds.). *The thyroid and reproduction*. New York: Georg Thieme Verlag, 2009, pp. 84-95.
 116. Casey B, Leveno K. Thyroid disease in pregnancy. *Obstet Gynecol*. 2006; 108(5):1283-1292.
 117. Skjoldebrand L, Brundin J, Carlstrom A, Pettersson T. Thyroid associated components in serum during normal pregnancy. *Acta Endocrinol* 1982; 100(4): 504-511.
 118. Boss AM, Kingstone D. Further observations on serum free thyroxine concentrations during pregnancy. *Br Med J (Clin Res Ed)* 1981;283:584.
 119. Hopton MR, Ashwell K, Scott IV, Harrop JS. Serum free thyroxine concentration and free thyroid hormone indices in normal pregnancy. *Clin Endocrinol* 1983;18:431-437.
 120. de Escobar GM, Obregón MJ, del Rey FE. Maternal thyroid hormones early in pregnancy and fetal brain development. *Best Pract Res Clin Endocrinol Metab* 2004;18:225-248.
 121. Kilby MD. Thyroid hormones and fetal brain development. *Clin Endocrinol* 2003; 59:280-281.
 122. Allan WC, Haddow JE, Palomaki GE et al. Maternal thyroid deficiency and pregnancy complications: implications for population screening. *J Med Screen* 2000; 7:127-130.
 123. Vaidya B, Anthony S, Bilous M et al. Detection of thyroid dysfunction in early pregnancy: universal screening or targeted high-risk case finding? *Journal of Clinical Endocrinology and Metabolism* 2007; 92: 203-207.
 124. Mitchell ML, Klein RZ, Sargent JD et al. Iodine sufficiency and measurements of thyroid function in maternal hypothyroidism. *Clinical Endocrinology (Oxford)* 2003; 58: 612-616.
 125. Casey BM, Dashe JS, Wells CE et al. Subclinical hypothyroidism and pregnancy outcomes. *Obstetrics & Gynecology* 2005; 105: 239-245.
 126. Haddow JE, Palomaki GE, Allan WC et al. Maternal thyroid deficiency during pregnancy and subsequent neuropsychological development of the child. *The New England Journal of Medicine* 1999; 341: 549-555.
 127. Glinoer D, Fernandez-Soto ML, Bourdoux P et al. Pregnancy in patients with mild thyroid abnormalities: maternal and neonatal repercussions. *J Clin Endocrinol Metab* 1991;73:421-427.
 128. Glinoer D, Riahi M, Grun JP, Kinthaert J. Risk of subclinical hypothyroidism in pregnant women with asymptomatic autoimmune thyroid disorders. *J Clin Endocrinol Metab* 1994;79:197-204.
 129. Abalovich M, Amino N, Barbour LA et al. Management of thyroid dysfunction during pregnancy and postpartum: an Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab* 2007; 92(8 Suppl): S1-S47.

130. Abalovich M, Gutierrez S, Alcaraz G et al. Overt and subclinical hypothyroidism complicating pregnancy. *Thyroid* 2002; 12: 63-68.
131. Tan TO, Cheng YW, Caughey AB. Are women who are treated for hypothyroidism at risk for pregnancy complications? *American Journal of Obstetrics and Gynecology* 2006; 194: e1-e3.
132. Negro R, Schwartz A, Gismondi R et al. Universal screening versus case finding for detection and treatment of thyroid hormonal dysfunction during pregnancy. *Journal of Clinical Endocrinology and Metabolism* 2010; 95: 1699-1707.
133. Benhadi N, Wiersinga WM, Reitsma JB et al. Higher maternal TSH levels in pregnancy are associated with increased risk for miscarriage, fetal or neonatal death. *European Journal of Endocrinology* 2009; 160: 985-991.
134. Cleary-Goldman J, Malone FD, Lambert-Messerlian G et al. Maternal thyroid hypofunction and pregnancy outcome. *Obstetrics & Gynecology* 2008; 112: 85-92.
135. Männistö T, Väärämäki M, Pouta A et al. Perinatal outcome of children born to mothers with thyroid dysfunction or antibodies: a prospective populationbased cohort study. *Journal of Clinical Endocrinology and Metabolism* 2009; 94: 772-779.
136. Stagnaro-Green A, Roman SH, Cobin RH et al. Detection of at-risk pregnancy by means of highly sensitive assays for thyroid autoantibodies. *Journal of the American Medical Association* 1990; 264: 1422-1425.
137. Thangaratnam S, Tan A, Knox E et al. Thyroid autoantibodies are strongly associated with miscarriage and preterm birth:a meta-analysis of evidence. *British Medical Journal* 2011; 342: d2616.
138. Ghafoor F, Mansoor M, Malik T et al. Role of thyroid peroxidase antibodies in the outcome of pregnancy. *Journal of College of Physicians and Surgeons Pakistan* 2006; 16: 468-471.
139. Haddow JE, Cleary-Goldman J, McClain MR et al. First- and Second-Trimester Risk of Aneuploidy (FaSTER) Research Consortium. Thyroperoxidase and thyroglobulin antibodies in early pregnancy and preterm delivery. *Obstetrics & Gynecology* 2010; 116: 58-62.
140. Iijima T, Tada H, Hidaka Y et al. Effects of autoantibodies on the course of pregnancy and fetal growth. *Obstetrics & Gynecology* 1997; 90: 364-369.
141. Negro R, Formoso G, Mangieri T et al. Levothyroxine treatment in euthyroid pregnant women with autoimmune thyroid disease: effects on obstetrical complications. *Journal of Clinical Endocrinology and Metabolism* 2006; 91: 2587-2591.
142. Kiproff DD, Natchigall RD, Weaver RC et al. The use of intravenousimmunoglobulin in recurrent pregnancy loss associated with combined alloimmune and autoimmune abnormalities. *American Journal of Reproductive Immunology* 1996; 36: 228-234.
143. Stricker RB, Steinleitner A, Bookoff CN et al. Successful treatment of immunologic abortion with low dose intravenous immunoglobulin. *Fertility and Sterility* 2000; 73: 536-540.

144. Vaquero E, Lazzarin N, De Carolis C. Mild thyroid abnormalities and recurrent spontaneous abortion: diagnostic and therapeutical approach. *American Journal of Reproductive Immunology* 2000; 43: 204-208.
145. Weetman A. Graves' disease. *N Engl J Med* 2000;343:1236-1248.
146. Clowse ME, Magder LS, Witter F, Petri M. The impact of increased lupus activity on obstetric outcomes. *Arthritis Rheum* 2005; 52:514.
147. Yang H, Liu H, Xu D, et al. Pregnancy-related systemic lupus erythematosus: clinical features, outcome and risk factors of disease flares--a case control study. *PLoS One* 2014; 9:e104375.
148. Kwok LW, Tam LS, Zhu T, et al. Predictors of maternal and fetal outcomes in pregnancies of patients with systemic lupus erythematosus. *Lupus* 2011; 20:829.
149. Buyon JP, Kim MY, Guerra MM, et al. Predictors of Pregnancy Outcomes in Patients With Lupus: A Cohort Study. *Ann Intern Med* 2015; 163:153.
150. Henderson JT, Whitlock EP, O'Conner E, et al. Low-Dose Aspirin for the Prevention of Morbidity and Mortality From Preeclampsia: A Systematic Evidence Review for the U.S. Preventive Services Task Force [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US) 2014.
151. Clowse ME, Magder L, Witter F, Petri M. Hydroxychloroquine in lupus pregnancy. *Arthritis Rheum* 2006; 54:3640.
152. Al-Herz A, Schulzer M, Esdaile JM. Survey of antimalarial use in lupus pregnancy and lactation. *J Rheumatol* 2002; 29:700.
153. Parke AL, Rothfield NF. Antimalarial drugs in pregnancy--the North American experience. *Lupus* 1996; 5 Suppl 1:S67.
154. Klinger G, Morad Y, Westall CA, et al. Ocular toxicity and antenatal exposure to chloroquine or hydroxychloroquine for rheumatic diseases. *Lancet* 2001; 358:813.
155. Costedoat-Chalumeau N, Amoura Z, Duhaut P, et al. Safety of hydroxychloroquine in pregnant patients with connective tissue diseases: a study of one hundred thirty-three cases compared with a control group. *Arthritis Rheum* 2003; 48:3207.
156. Levy RA, Vilela VS, Cataldo MJ, et al. Hydroxychloroquine (HCQ) in lupus pregnancy: double-blind and placebo-controlled study. *Lupus* 2001; 10:401.
157. Sperber K, Hom C, Chao CP, et al. Systematic review of hydroxychloroquine use in pregnant patients with autoimmune diseases. *PediatrRheumatol Online J* 2009; 7:9.
158. Smyth A, Oliveira GH, Lahr BD, et al. A systematic review and meta-analysis of pregnancy outcomes in patients with systemic lupus erythematosus and lupus nephritis. *Clin J Am SocNephrol* 2010; 5:2060.
159. Petri M. Prospective study of systemic lupus erythematosus pregnancies. *Lupus* 2004; 13:688.
160. Gladman DD, Tandon A, Ibañez D, Urowitz MB. The effect of lupus nephritis on pregnancy outcome and fetal and maternal complications. *J Rheumatol* 2010; 37:754.
161. Saavedra MA, Cruz-Reyes C, Vera-Lastra O, et al. Impact of previous lupus nephritis on maternal and fetal outcomes during pregnancy. *ClinRheumatol* 2012; 31:813.
162. Saavedra MA, Sánchez A, Morales S, et al. Primigravida is associated with flare in women with systemic lupus erythematosus. *Lupus* 2015; 24:180.

163. Clowse ME, Jamison M, Myers E, James AH. A national study of the complications of lupus in pregnancy. *Am J ObstetGynecol* 2008; 199:127.
164. Yasmeen S, Wilkins EE, Field NT, et al. Pregnancy outcomes in women with systemic lupus erythematosus. *J Matern Fetal Med* 2001; 10:91.
165. Chapman AB, Abraham WT, Zamudio S, et al. Temporal relationships between hormonal and hemodynamic changes in early human pregnancy. *Kidney Int* 1998; 54:2056.
166. Robson SC, Hunter S, Boys RJ, Dunlop W. Serial study of factors influencing changes in cardiac output during human pregnancy. *Am J Physiol* 1989; 256:H1060.
167. Robson SC, Hunter S, Moore M, Dunlop W. Haemodynamic changes during the puerperium: a Doppler and M-mode echocardiographic study. *Br J Obstet Gynaecol* 1987; 94:1028.
168. Metcalfe J, Ueland K. Maternal cardiovascular adjustments to pregnancy. *Prog Cardiovasc Dis* 1974; 16:363.
169. Kerr MG. The mechanical effects of the gravid uterus in late pregnancy. *J Obstet Gynaecol Br Commonw* 1965; 72:513.
170. Siu SC, Sermer M, Harrison DA, et al. Risk and predictors for pregnancy-related complications in women with heart disease. *Circulation* 1997; 96:2789.
171. Siu SC, Sermer M, Colman JM, et al. Prospective multicenter study of pregnancy outcomes in women with heart disease. *Circulation* 2001; 104:515.
172. Siu SC, Colman JM, Sorensen S, et al. Adverse neonatal and cardiac outcomes are more common in pregnant women with cardiac disease. *Circulation* 2002; 105:2179.
173. McFaul PB, Dornan JC, Lamki H, Boyle D. Pregnancy complicated by maternal heart disease. A review of 519 women. *Br J Obstet Gynaecol* 1988; 95:861.
174. Tidswell M. Peripartum cardiomyopathy. *Crit Care Clin.* 2004;20:777-778.
175. Sliwa K, Skudicky D, Berbemann A et al. Peripartum cardiomyopathy: Analysis of clinical outcome, left ventricular function, plasma levels of cytokines and Fas/APO-1. *J Am Coll Cardiol.* 2000;35(3):701-705.
176. Sliwa K, Hilfiker-Kleiner D, Petrie MC et al. Current state of knowledge on aetiology, diagnosis, management and therapy of peripartum cardiomyopathy: a position statement from the Heart Failure Association of the European Society of Cardiology Working Group on peripartum cardiomyopathy. *Eur J Heart Fail* 2010; 12:767.
177. Hafkesbring E, Hull E. "Toxic" postpartal heart disease. *New Orleans Med Surg J* 1937; 89:550.
178. Demakis JG, Rahimtoola SH, Sutton GC et al. Natural course of peripartum cardiomyopathy. *Circulation* 1971; 44:1053.
179. Elkayam U, Akhter MW, Singh H et al. Pregnancy associated cardiomyopathy: clinical characteristics and a comparison between early and late presentation. *Circulation* 2005; 111:2050.
180. Bello N, Rendon IS, Arany Z. The relationship between preeclampsia and peripartum cardiomyopathy: a systematic review and metaanalysis. *J Am Coll Cardiol* 2013; 62:1715.

181. Homans DC. Peripartum cardiomyopathy. *N Engl J Med* 1985; 312:1432.
182. Abboud J, Murad Y, Chen-Scarabelli C et al. Peripartum cardiomyopathy: a comprehensive review. *Int J Cardiol.* 2007;118(3):295-303.
183. Pawde AA; Kulkarni MP; Unni J .Pregnancy in women aged 35 years and above: a prospective observational study.*Journal of Obstetrics and Gynaecology of India.* 2015 Apr; 65(2): 93-6.
184. Sonam Kunjam, Meenakshi Samariya, Kavita Tanwar, Smita Gaur. Risk factor and outcome with Gestational Diabetes Mellitus(GDM): A Cross-sectional Analysis. *International Multispecialty Journal of Health (IMJH)*[Vol-3, Issue-7, July- 2017] 2395-6291.
185. Rajesh Rajput, Yogesh Yadav, Smiti Nanda and Meena Rajput. Prevalence of gestational diabetes mellitus & associated risk factors at a tertiary care hospital in Haryana. *Indian J Med Res.* 2013 Apr; 137(4): 728–733.
186. Estimated Pregnancy Rates and Rates of Pregnancy Outcomes for the United States, 1990–2008. *National Vital Statistics Reports Volume 60, Number 7* June 20, 2012.
187. Seshiah V, Balaji V, Balaji MS, Sanjeevi CB, Green A. Gestational diabetes mellitus in India. *J Assoc Physicians India.* 2004;52:707–11.
188. Ashakiran T. Rathod Email author K. V. Malini. Study of Obstetric Admissions to the Intensive Care Unit of a Tertiary Care Hospital. *The Journal of Obstetrics and Gynecology of India* October 2016, Volume 66, Supplement 1, pp 12–17.
189. Appinabhavi A et al. *Int J Reprod Contracept Obstet Gynecol.* 2014 Mar;3(1):189-194.
190. Sangeeta G; Leena W; Taru G; Sushma K; Nupur G; Amrita P. Evaluation of severe maternal outcomes to assess quality of maternal health care at a tertiary center.*Journal of Obstetrics and Gynaecology of India.* 2015 Feb; 65(1): 23-7.
191. Prabhu TR. Cerebrovascular complications in pregnancy and puerperium.*Journal of Obstetrics and Gynaecology of India.* 2013 Apr; 63(2): 108-11.
192. Bharti S; Tiwary R. Modern management of eclampsia.*Indian Medical Journal.* 2014 apr; 108(4): 130-31.
193. Ajmani SN; Aggarwal D; Bhatia P; Sharma M; Sarabhai V; Paul M. Prevalence of overt and subclinical thyroid dysfunction among pregnant women and its effect on maternal and fetal outcome.*Journal of Obstetrics and Gynaecology of India.* 2014 Apr; 64(2): 105-10.
194. Zargar AH, Sheikh MI, Bashir MI, Masoodi SR, Laway BA, Wani AI, et al. Prevalence of gestational diabetes mellitus in Kashmiri women from the Indian Subcontinent. *Diabetes Res Clin Pract.* 2004;66:139–45.
195. Seshiah V, Balaji V, Balaji MS, Paneerselvam A, Arthi T, Thamizharasi M, et al. Prevalence of gestational diabetes mellitus in South India (Tamil Nadu) - a community based study. *J Assoc Physicians India.* 2008;56:329–33.
196. Khadilkar SS; Saraiya U. Tuberculosis and pregnancy : a ten year overview.*Journal of Obstetrics and Gynaecology of India.* 2003 Sep-Oct; 53(5): 453-7.

197. Shah AR; Shah CK; Mehta HK; Gadhavi RN. Anaemia in pregnancy magnitude of problem and issues related to the low compliance of iron-folic acid (IFA) tablets in slums of Vadodara city, Gujarat. *Indian Practitioner*. 2012 sept; 65(9): 548-52.
198. Maru L; Yadav S; Maskola A. Maternal and perinatal outcome in cases of severe anemia. *IJCP*. 2009 sept; 20(4): 329-33.
199. Babbar K et al. A comparative study of efficacy of antihypertensive drugs and fetomaternal outcome in the treatment of pregnancy induced hypertension. *Int J Reprod Contracept Obstet Gynecol*. 2015 Dec;4(6):1846-1852.
200. Tarakeswari Surapaneni, Vidyavati Patil Bada, and C. Praveen Kumar Nirmalan. Risk for Recurrence of Pre-eclampsia in the Subsequent Pregnancy. *J Clin Diagn Res*. 2013 Dec; 7(12): 2889–2891.
201. National Vital Statistics Reports Volume 66, Number 1 January 5, 2017.
202. Deepti Singh, Srinivas Goli,* and Sulabha Parsuraman. Association between obstetric complications & previous pregnancy outcomes with current pregnancy outcomes in Uttar Pradesh, India. *Indian J Med Res*. 2014 Jan; 139(1): 83–90.
203. Kumar S G, Unnikrishnan B, Nagaraj K, Jayaram S. Determinants of pre-eclampsia: A case-control study in a district hospital in South India. *Indian J Community Med* 2010;35:502-5.
204. K Jagadish Kumar, N Asha, D Srinivasa Murthy, MS Sujatha, and VG Manjunath. Maternal Anemia in Various Trimesters and its Effect on Newborn Weight and Maturity: An Observational Study. *Int J Prev Med*. 2013 Feb; 4(2): 193–199.
205. Odegård RA1, Vatten LJ, Nilsen ST, Salvesen KA, Austgulen R. Preeclampsia and fetal growth. *Obstet Gynecol*. 2000 Dec;96(6):950-5.
206. AM Panaitescu et al. *Ultrasound Obstet Gynecol* 50 (2), 228-235. 2017 Jun 22.
207. Chen HT, et al. Investigation of pregestational diabetes mellitus in 15 hospitals in Guangdong province. *Zhonghua Fu Chan Ke Za Zhi*. 2017.
208. ACOG practice bulletin: clinical management guidelines for obstetrician-gynecologists number 90, February 2008: asthma in pregnancy. *Obstet Gynecol* 2008;111: 457-64.
209. National Asthma Education and Prevention Program. Expert panel report 3: guidelines for the diagnosis and management of asthma: full report 2007. (<http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>.)
210. Haddow JE, Knight GJ, Palomaki GE et al. The reference range and within-person variability of thyroid stimulating hormone during the first and second trimesters of pregnancy. *Journal of Medical Screening* 2004; 11: 170-174.
211. Alexander Erik K., Pearce Elizabeth N., Brent Gregory A., Brown Rosalind S., Chen Herbert, Dosiou Chrysoula, Grobman William A., Laurberg Peter, Lazarus John H., Mandel Susan J., Peeters Robin P., and Sullivan Scott. Guidelines of the American Thyroid Association for the Diagnosis and Management of Thyroid Disease During Pregnancy and the Postpartum. *Thyroid*. March 2017, 27(3): 315-389. 2017.
212. FAO,WHO. World declaration and plan of action for nutrition. International conference on nutrition. Rome, Food and agriculture organization of the United Nations, December 1992.

213. WHO, UNICEF, UNU. Iron deficiency anaemia: assessment, prevention and control, a guide for programme managers. Geneva, World Health Organisation, 2001.
 214. American Diabetes Association Standards of medical care in diabetes - 2010. *Diabetes Care*. 2010;33:S11–S16.
 215. International association of diabetes and pregnancy study groups recommendations on the diagnosis and classification of hyperglycemia in pregnancy. *Diabetes Care*. 2010;33:676–682.
 216. Gilstrap LC, Ramin SM. Urinary tract infections during pregnancy. *Obstet Gynecol Clin*. 2001 Sep 1;28(3):581–91.
 217. Sheffield JS, Cunningham FG. Urinary tract infection in women. *Obstet Gynecol*. 2005 Nov;106(5 Pt 1):1085–92.
 218. Artero A, Alberola J, Eiros JM, Nogueira JM, Cano A. Pyelonephritis in pregnancy. How adequate is empirical treatment? *Rev Esp Quimioter Publ Of Soc Esp Quimioter*. 2013 Mar;26(1):30–3.
 219. Goodnight WH, Soper DE. Pneumonia in pregnancy. *Crit Care Med*. 2005 Oct;33(10 Suppl):S390-397.
 220. Bhalerao-Gandhi A, Chhabra P, Arya S, Simmerman JM. Influenza and Pregnancy: A Review of the Literature from India. *Infect Dis Obstet Gynecol*. 2015
 221. Chrispal A, Boorugu H, Gopinath KG, Chandy S, Prakash JAJ, Thomas EM, et al. Acute undifferentiated febrile illness in adult hospitalized patients: the disease spectrum and diagnostic predictors - an experience from a tertiary care hospital in South India. *Trop Doct*. 2010 Oct;40(4):230–4.
 222. S.N. Tripathya, S.N. Tripathy. Tuberculosis and pregnancy. *International Journal of Gynecology and Obstetrics* 80 (2003) 247–253.
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ANNEXURES

I. DEFINITIONS

1. Hypertension

Hypertension in pregnancy is defined as a blood pressure of greater than or equal to 140mmHg (systolic) or 90 mmHg (diastolic) on at least two measurements, ideally separated by a period of rest. Severe hypertension is defined as a blood pressure of greater than 160–170/110 mmHg. Systolic hypertension of greater than 180 mmHg is a medical emergency.^[32] Hypertensive disorders of pregnancy can be subclassified into four groups – chronic hypertension, gestational hypertension, preeclampsia-eclampsia and superimposed preeclampsia in the setting of chronic hypertension.^[39] Hypertension detected for the first time after 20 weeks of pregnancy and in the absence of any other features of preeclampsia is classified as gestational hypertension. The classical definition of preeclampsia is new onset hypertension in pregnancy after 20 weeks with proteinuria.

2. Asthma

The diagnosis of asthma in pregnancy is confirmed when spirometry shows a reduced FEV1 or ratio of FEV1 to forced vital capacity, with a 12% or greater improvement in FEV1 after the administration of inhaled albuterol confirms.^[208,209]

3. Thyroid disorder

The upper limit for TSH is 2.5 mIU/L in the first trimester, and 3.0 mIU/L in the second and third trimesters. The lower physiological limit could be 0.1 mIU/L in the first trimester, 0.2 mIU/L in the second, and 0.3 mIU/L in the third.^[210]

Overt hypothyroidism is defined as a clinical syndrome of hypothyroidism associated with elevated TSH and decreased serum levels of T4 or T3. Subclinical hypothyroidism is defined as a condition without typical symptoms of hypothyroidism, elevated TSH ($>5 \mu\text{U/mL}$), and normal circulating thyroid hormone.

Overt thyrotoxicosis is defined as the syndrome of hyperthyroidism associated with suppressed TSH and elevated serum levels of T4 or T3. Subclinical thyrotoxicosis is devoid of symptoms, but TSH is suppressed although there are normal circulating levels of thyroid hormone.^[211]

4. Anaemia in pregnancy

Anaemia is defined as haemoglobin level less than 11 mg/dl. Mild anaemia is defined as a haemoglobin value between 10 and 11 mg/dl. Moderate anaemia is a haemoglobin value between 7 to 10 mg/dl and severe anaemia the haemoglobin is lower than 7 mg/dl.^[212,213]

5. Gestational diabetes mellitus

Gestational diabetes mellitus (GDM) has been defined as any degree of glucose intolerance with onset or first recognition during pregnancy.^[214]

Table 36: GDM diagnostic threshold values

Organization	OGTT glucose load	Plasma glucose concentration thresholds (mg/dl)			
		Fasting	1-hour	2-hour	3-hour
ADA*	100 g	95	180	155	140
ACOG*	100 g	105	190	165	145
WHO§	75 g	126	-	140	-
IADPSG§	75 g	92	180	153	-

Adapted from Gestational diabetes mellitus: why screen and how to diagnose . Hippokratia. 2010 Jul-Sep

*Diagnosis of GDM if two or more glucose values equal to or exceeding the threshold values §Diagnosis of GDM if one or more glucose values equal to or exceeding the threshold values GDM: Gestational Diabetes Mellitus, OGTT: Oral Glucose Tolerance Test, ADA: American Diabetes Association, ACOG: American Council of Obstetricians and Gynecologists, WHO: World Health Organization, IADPSG: International Association of Diabetes and Pregnancy Groups

6. Overt diabetes mellitus

For the identification of overt diabetes during pregnancy and its distinction from GDM, the IADPSG recommends that fasting plasma glucose (FPG) or glycosylated hemoglobin (A1c) should be measured at the first prenatal visit on all or only high-risk women (depending on the frequency of diabetes in the background population and on local circumstances).^[215] Values equal to or above 126 mg/dl and 6.5% (for FPG and A1c, respectively) establish the diagnosis of overt diabetes.

7. Asymptomatic bacteriuria

Asymptomatic bacteriuria occurs when there is colonization of particularly the lower part of the urinary tract. Initially a growth of 10^5 colony forming units (CFUs)/mL of a single organisms growing on 2 separate properly collected urine samples was required to diagnose asymptomatic bacteriuria.^[216] It has also been reported that suggests that even lower colony count ($\geq 10^2$ – 10^3 CFUs/mL) can also demonstrate active sepsis and can lead to upper urinary tract infection in pregnant women.

8. Acute cystitis

Acute cystitis presents with clinical features of dysuria along with frequency and urgency with no other findings to suggest bacteremia. A single causative organism with 10^5 colony forming units must be isolated to diagnose cystitis.^[217]

9. Acute febrile illness

Acute febrile illness in pregnancy is defined as fever for less than a total of 14 days with a recorded temperature of more than 100.4 for more than 48 hours requiring admission.

Acute febrile illness in peripartum and post-partum being defined as fever more than 100.8 degrees on 2 separate occasions at least 24 hours after delivery.

10. Pyelonephritis:

Acute pyelonephritis defined as presence of urinary tract infection by urine routine and microscopy with more than >8-12 white blood cell count, and <2-4 epithelial cells and urine culture of more than >100,000 colony forming units as well as clinical findings of flank pain, renal angle tenderness along with fever more than 100.4.^[218]

11. Pneumonia/lower respiratory tract infection:

Fever more than 100.4 F, cough and shortness of breath associated with respiratory findings consistent with the same high counts and with /without CXR findings.^[219]

12. Influenza like illness:

Influenza-like illness was defined by fever (>100.4 F), plus cough or sore throat.^[220]

13. Influenza

Fever more than 100.4 F along with cough, sore throat and positive throat swab for H1N1/H3N1.^[220]

14. Dengue fever

Dengue IgM positive + other serology negative OR seroconversion on convalescent sera.^[221]

15. Dengue hemorrhagic fever (DHF):

Presence of thrombocytopenia along with fulfillment of criteria for dengue.^[221]

16. Dengue shock syndrome (DSS):

Fulfillment of criteria for dengue hemorrhagic fever along with hypotension.^[221]

17. Systemic lupus erythematosus (SLE)

SLE is diagnosed in the presence of 4 or more of the following criteria (atleast 1 clinical and 1 laboratory criteria) or biopsy proven lupus nephritis with positive ANA or anti DsDNA.(Table 37)

Table 37: SLICC criteria for diagnosis of SLE

Clinical Criteria

1. Acute cutaneous lupus
2. Chronic cutaneous lupus
3. Oral ulcers/nasal ulcers
4. Nonscarring alopecia
5. Synovitis involving two or more joints, characterized by swelling or effusion OR tenderness in 2 or more joints and thirty minutes or more of morning stiffness.
6. Serositis:pleural and pericardial
7. Renal: Urine protein/creatinine (or 24 hr urine protein) representing 500 mg of protein/24 hr or Red blood cell casts
8. Neurologic: seizures/psychosis/mononeuritis multiplex/myelitis/peripheral or cranial neuropathy/acute confusional state
9. Hemolytic anemia
10. Leukopenia ($< 4000/\text{mm}^3$ at least once)/Lymphopenia ($< 1000/\text{mm}^3$ at least once)

11. Thrombocytopenia ($<100,000/\text{mm}^3$) at least once

Immunological Criteria

1. ANA above laboratory reference range

2. Anti-dsDNA above laboratory reference range, except ELISA: twice above laboratory reference range

3. Anti-Sm

4. Antiphospholipid antibody:lupus anticoagulant/false-positive RPR/medium or high titer anticardiolipin (IgA, IgG or IgM)/anti- β_2 glycoprotein I (IgA, IgG or IgM)

5. Low complement :low C3, C4, CH50

6. Direct Coombs test in the absence of hemolytic anemia

Adapted from Derivation and Validation of Systemic Lupus International Collaborating Clinics Classification Criteria for Systemic Lupus Erythematosus Arthritis Rheum. 2012 Aug; 64(8): 2677–2686.

18. Tuberculosis in Pregnancy

Diagnosis of pulmonary tuberculosis

Symptoms of TB are cough, lassitude, lethargy, listlessness, and persistent fever for more than 15 days. At least two out of the three sputum smears should be

acid-fast bacillus positive to label the patient smear.

Extrapulmonary tuberculosis

Along with the symptoms produced by the organs affected, a pregnant woman with extrapulmonary TB may also have constitutional TB features. Investigations corresponding to the site of affection are carried out to establish diagnosis, e.g. fine-needle aspiration cytology (FNAC) testing, biopsy samples taken for external lymphadenopathies, or pleural, ascitic, or pericardial tappings in the respective effusions. A guarded lumbar puncture may be carried out to confirm tuberculous

Meningitis. Sterile pyuria with positive Montoux test in a pregnant woman may suggest renal TB positive.^[222]

II. PATIENT INFORMATION SHEET

Christian Medical College, Vellore
Department of Medicine 3

Clinical profile of patients attending the Obstetric Medicine Clinic in a tertiary care Centre in South India

You are being requested to participate in a study looking at the clinical profile of pregnant patients attending the Obstetric Medicine Clinic at CMC Vellore. The study will be done over a period of 1 year starting from September 2016 to August 2017.

If you take part what will you have to do?

If you agree to participate in this study, you will be requested to answer a questionnaire regarding your name, age, place of residence, education, occupation and your husband's occupation. We will ask the date of your last menstrual period in order to calculate your weeks of gestation. We will record the reason why you came to this clinic and details of any prior treatment received. The questionnaire will also include your details of any previous pregnancy, medical problems and complications and your family history. We will also contact you for any review visits during the course of the study. You may be contacted through telephone post-delivery to know the health of the baby and mother.

All other treatments that you are already on will be continued and your regular treatment will not be changed during this study.

No additional procedures or blood tests will be conducted routinely for this study. If at any time you experience any problems, you will be expected to come for review with your primary physician.

Can you withdraw from this study after it starts?

Your participation in this study is entirely voluntary and you are also free to decide to withdraw permission to participate in this study. If you do so, this will not affect your usual treatment at this hospital in any way.

What will happen if you develop any study related injury?

We do not expect any injury to happen to you as a result of participating in the study. It involves only answering a questionnaire during a scheduled visit to the doctor.

Will you have to pay for the study?

You will not need to pay any amount for participating in the study. You will be interviewed during your scheduled visit only and will not be asked to come to the hospital at any other time. Travel expenses will not be compensated.

Any other treatment that you usually take will continue but the usual arrangements that you have with the hospital will decide how much you pay for this.

What happens after the study is over?

You may or may not benefit from the study. Once the study is over, if we find any information of significance to patient care, this will be incorporated in the guidelines for future patients.

Will your personal details be kept confidential?

The results of this study will be published in a medical journal but you will not be identified by name in any publication or presentation of results. However, your medical notes may be reviewed by people associated with the study, without your additional permission, should you decide to participate in this study.

If you have any further questions, please ask Dr. Dan Mathew Luke (tel: 0416 2282039/ 9894223226) or email: med3@cmcvellore.ac.in, danmathewluke@yahoo.co.in

III. INFORMED CONSENT FORM FOR SUBJECTS

Informed Consent form to participate in a research study

Study Title: Clinical profile of patients attending the Obstetric Medicine Clinic in a tertiary care Centre in South India

Study Number: _____

Subject's Initials: _____ **Subject's Name:** _____

Date of Birth / Age: _____ (Subject)

- (i) I confirm that I have read and understood the information sheet dated _____ for the above study and have had the opportunity to ask questions. []
- (ii) I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected. []
- (iii) I understand that the Ethics Committee and the regulatory authorities will not need my permission to look at my health records both in respect of the current study and any further research that may be conducted in relation to it, even if I withdraw from the trial. I agree to this access. However, I understand that my identity will not be revealed in any information released to third parties or published. []
- (iv) I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s). []
- (v) I agree to take part in the above study. []

Signature (or Thumb impression) of the Subject/Legally Acceptable

Date: ____/____/____

Signatory's Name: _____

Signature:

Or



Representative: _____

Date: ____/____/____

Signatory's Name: _____

Signature of the Investigator: _____

Date: ____/____/____

Study Investigator's Name: _____

Signature or thumb impression of the Witness: _____

Date: ____/____/____

Name & Address of the Witness: _____

IV. CLINICAL RESEARCH FORM

Clinical Research Form

Clinical profile of patients attending the Obstetric Medicine Clinic in a tertiary care centre in South India

Christian Medical College Vellore

Serial number:

Date of visit :

Socio-demographic data

Name		Gravida	
Hospital Number		Parity	
Age		Living	
Place of residence		Abortion	
Phone number		SB/ND/VM/MTP	
Occupation		LMP	
Spouse occupation		Weeks of gestation	

Antenatal Risk factors

	Treatment details		Treatment details
Hypertension		HIV/HBsAg seropos	
GDM/Pregest DM		Infertility	
Anemia*		IUGR	
Hypo/hyperthyroidism		Preterm	
Oligo/polyhydramnios		Others	
Rh negative		Congenital anomalies	
Multifetal pregnancy		Past obstetric events	

*Hemoglobin < 11 mg % (WHO)

Reason for Referral

Anemia		Urinary tract infection	
Hypertension		Fever	
GDM / Pregest DM		Seizure disorder	
Hypothyroidism		Heart disease	
Respiratory tract infection		Breathlessness	
Asthma		Palpitation	
Connective tissue disease		Others	

Past History

	Duration	Treatment details		Duration	Treatment details
Chr hypertension			RHD		
Diabetes Mellitus			Jaundice		
Asthma			Obstetric surgery		
Connective tissue disease			Non obs surgery		
Seizure disorder			Others		
Tuberculosis					

Medication history (Other than haematinics and Calcium)

Drug	Dosage	Duration (Date)

Family History

Hypertension		Tuberculosis	
Diabetes		Jaundice	
Thyroid disorder		Multifetal pregnancy	
Asthma		Congenital Anomalies	

Examination- (primary visit)

Pallor	Icterus	Cyanosis	Clubbing	Lymphadenopathy	Pedal oedema	JVP
Others						
Height				Temperature		
Weight				Thyroid		
BMI				Breast		
Pulse rate				CVS		
BP				RS		
Respiratory rate				Abdomen		
Peripheral pulse				CNS		

Impression

	Diagnosis	Treatment advised in OMC

Details of hospital admissions

Date	Diagnosis	Treatment

Details of review visits

Number of review visits :		
Date	Reason for review	Treatment

Outcome Measures

Gestational age at delivery	
Birth weight	
Mode of delivery	
M T P. If Yes, specify Reason	
Maternal complication	
Foetal complication	

V. IRB APPROVAL LETTER



**OFFICE OF RESEARCH
INSTITUTIONAL REVIEW BOARD (IRB)
CHRISTIAN MEDICAL COLLEGE, VELLORE, INDIA**

Dr. B.J. Prashantham, M.A., M.A., Dr. Min (Clinical)
Director, Christian Counseling Center,
Chairperson, Ethics Committee.

Dr. Anna Benjamin Pulimood, M.B.B.S., MD., Ph.D.,
Chairperson, Research Committee & Principal

Dr. Biju George, M.B.B.S., MD., DM.,
Deputy Chairperson,
Secretary, Ethics Committee, IRB
Additional Vice-Principal (Research)

June 24, 2017

Dr. Dan Mathew Luke,
PG Registrar,
Department of Medicine,
Christian Medical College,
Vellore – 632 002.

Sub: Fluid Research Grant NEW PROPOSAL:

Clinical profile of patents attending file Obstetric Medicine Clinic in a Tertiary care Centre in South India.

Dr. Dan Mathew Luke, Employment Number: 28976, Post graduate student f Department of General Medicine / Unit III, Dr. Sowmya Sathyendra, Employment Number: 28181 Professor and Head of Medicine Unit III, Dr. Sudhajasmine, Employment Number: 28296, Professor- Department of Medicine Unit III, Ms. Tunny Sebastian Employment Number: 32291 Lecturer, Department of Biostatistics.

Ref: IRB Min. No. 10626 [OBSERVE] dated 03.04.2017

Dear Dr. Dan Mathew Luke,

The Institutional Review Board (**Blue**, Research and Ethics Committee) of the Christian Medical College, Vellore, reviewed and discussed your project titled "Clinical profile of patents attending file Obstetric Medicine Clinic in a Tertiary care Centre in South India" on April 03rd 2017.

The Committee reviewed the following documents:

1. IRB Application format
2. Consent forms and Informed Consent forms,
3. Cvs of Drs. Sowmya, Sudha, Dan Mathew, Tunny Sebastian.
4. Proforma
5. No. of documents 1 – 4.

The following Institutional Review Board (Blue, Research & Ethics Committee) members were present at the meeting held on April 03rd 2017 in the CK Job Hall, Christian Medical College, Bagayam, Vellore 632002.

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Deputy Chairperson,
Secretary, Ethics Committee, IRB
Additional Vice-Principal (Research)

Name	Qualification	Designation	Affiliation
Dr. Biju George	MBBS, MD, DM	Professor, Haematology, Research), Additional Vice Principal , Deputy Chairperson (Research Committee), Member Secretary (Ethics Committee), IRB, CMC, Vellore	Internal, Clinician
Dr. B. J. Prashantham	MA(Counseling Psychology), MA (Theology), Dr. Min (Clinical Counselling)	Chairperson, Ethics Committee, IRB. Director, Christian Counseling Centre, Vellore	External, Social Scientist
Dr. Ratna Prabha	MBBS, MD (Pharma)	Associate Professor, Clinical Pharmacology, CMC, Vellore	Internal, Pharmacologist
Dr. Rekha Pai	BSc, MSc, PhD	Associate Professor, Pathology, CMC, Vellore	Internal, Basic Medical Scientist
Dr. Jayaprakash Muliyl	BSc, MBBS, MD, MPH, Dr PH (Epid), DMHC	Retired Professor, CMC, Vellore	External, Scientist & Epidemiologist
Mr. C. Sampath	BSc, BL	Advocate, Vellore	External, Legal Expert
Ms. Grace Rebekha	M.Sc., (Biostatistics)	Lecturer, Biostatistics, CMC, Vellore	Internal, Statistician
Dr. Sowmya Sathyendra	MBBS, MD (Gen. Medicine)	Professor, Medicine III, CMC, Vellore	Internal, Clinician
Dr. Santhanam Sridhar	MBBS, DCH, DNB	Professor, Neonatology, CMC, Vellore	Internal, Clinician
Dr. Thomas V Paul	MBBS, MD, DNB, PhD	Professor, Endocrinology, CMC, Vellore	Internal, Clinician
Dr Sneha Varkki	MBBS, DCH, DNB	Professor, Paediatrics, CMC, Vellore	Internal, Clinician
Dr. Sathish Kumar	MBBS, MD, DCH	Professor, Child Health, CMC, Vellore	Internal, Clinician

IRB Min. No. 10626 [OBSERVE] dated 03.04.2017

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**OFFICE OF RESEARCH
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Chairperson, Research Committee & Principal


Dr. Biju George, M.B.B.S., MD., DM.,
Deputy Chairperson,
Secretary, Ethics Committee, IRB
Additional Vice-Principal (Research)

Dr. Anuradha Rose	MBBS, MD, MHSC (Bioethics)	Associate Professor, Community Health, CMC, Vellore	Internal, Clinician
Dr. Ajith Sivadasan	MD, DM	Professor, Neurological Sciences, CMC, Vellore	Internal, Clinician
Dr. Visalakshi. J	MPH, PhD	Lecturer, Biostatistics, CMC, Vellore	Internal, Statistician
Mrs. Pattabiraman	BSc, DSSA	Social Worker, Vellore	External, Lay Person
Dr. Mathew Joseph	MBBS, MCH	Professor, Neurosurgery, CMC, Vellore	Internal, Clinician
Dr. Shyam Kumar NK	MBBS, DMRD, DNB, FRCR, FRANZCR	Professor, Radiology, CMC, Vellore	Internal, Clinician

We approve the project to be conducted as presented.

Kindly provide the total number of patients enrolled in your study and the total number of withdrawals for the study entitled: "Clinical profile of patients attending Antenatal Clinic in a Tertiary care Centre in South India" on a monthly basis. Please send copies of this to the Research Office (research@cmcvellore.ac.in).

Yours sincerely,


Dr. Biju George
Secretary (Ethics Committee)
Institutional Review Board

DR. BIJU GEORGE
MBBS., MD., DM.
SECRETARY - (ETHICS COMMITTEE)
Institutional Review Board,
Christian Medical College, Vellore - 632 002.

IRB Min. No. 10626 [OBSERVE] dated 03.04.2017

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VI. ABSTRACT

Setting

This is an observational study conducted in the department of General Medicine at Christian Medical College Hospital, Vellore over a period of 11 months. All pregnant patients attending the Obstetric Medicine clinic, who newly register or are referred, from September 2016 to July 2017, were enrolled.

Design

This is an observational study with a follow up of a historical cohort. The historical cohort consists of patients who attend the clinic from September 2016 to March 2017. The prospective cohort consists of patients who attend the clinic from April 2017 to July 2017.

Objective

To study the common reasons for referral to the Obstetric Medicine clinic

To ascertain the frequency of common medical disorders in pregnancy

To study maternal and fetal outcomes of patients referred to the Obstetric Medicine clinic

To determine the correlation between age and frequency of medical disorders

Participants

All pregnant patients who attend the Obstetric Medicine clinic are enrolled at their first visit. All patients below the age of 18 years as per hospital records were excluded. Postnatal patients who may also be referred to this clinic were excluded. Patients who refused an informed consent were excluded.

Results

In this study 445 patients attended the Obstetric Medicine clinic from September 2016 to July 2017. Out of which 52 were excluded. 393 patients were included in the analysis. 78 patients were yet to deliver at the end of the study period and 8 were lost to follow up. Hence 307 patient outcomes were available. The mean age of the population was 27 ± 4.9 years. 49.4% were primigravida. Mean gestational age at delivery was 36 ± 4.6 weeks. The mean birth weight was 2.8 ± 0.5 kg. 57.3% delivered vaginally. 20% of patients delivered preterm and 25% were low birth weight. There were 16 abortions and 1 neonatal death. There were no maternal deaths. The most common reason for referral was for the evaluation of hypothyroidism (22.1%) followed by respiratory tract symptoms (20.4%), cardiac symptoms, control of blood pressure and blood sugar. The most common diagnosis made in the Obstetric Medicine clinic was hypothyroidism (25.4%), infections (17.5%) and chronic hypertension (13.4%). There was no correlation of age (≥ 35 years) and the common medical diseases in pregnancy. There was a significant correlation of chronic hypertension and preeclampsia with preterm birth ($p < 0.001$), low birth weight ($p = 0.002$, < 0.001) and other fetal complication ($p = 0.012$, < 0.001). There was a significant association of family history of diabetes mellitus with gestational diabetes ($p = 0.01$) and family history of hypertension with chronic hypertension ($p < 0.001$) and preeclampsia ($p = 0.003$).

Outcome:

The most common reason for referral was for management of hypothyroidism. There was no correlation of age (≥ 35 years) with the common medical disorders. There was a significant

correlation of chronic hypertension and preeclampsia with preterm birth, low birth weight and foetal complication.

Conclusion

This study illustrates the importance of an Obstetric Medicine referral clinic in helping manage the common medical illness and describes its impact on maternal and fetal outcome. Early diagnosis and targeted intervention can result in reducing the maternal and fetal morbidity and mortality.

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163	FRONTA	FALSE		5 REACTIVE ARVIA								10 AZITHR	12 LEVOCE	13 MOIASTALIN2					TRUE	FUNCTH	FALSE					0	40	3.75	3	TRUE		3			TRUE	5	
164		FALSE		10	3							5 T.NICAP	9 ELTROMIN5MCI						TRUE	HYPOTH	TRUE	1	1 C/CHTN			2	36	1.87		3	FALSE				TRUE	5 PRETERM	
165		TRUE	BILATP	13 MODERATE PERC								13 MOISEROFLOW							FALSE		FALSE					0	39	2.8	3	FALSE					FALSE		
166		FALSE		5 VIRAL URI								11 BENADOL	14 PARACETANOLI						FALSE	TRUE	1	1 FALSEL				0	37	3.12	3	TRUE		6 BLADE	FALSE			FALSE	
167		FALSE		5 URI-RE	9 GESTATIONAL H							5 LABETALOL 1001							FALSE	TRUE	1	1 GESTAT				0	38	3.1	3	FALSE					FALSE		
168		FALSE		5 ATYPICAL COMPLY								10 AZITHR	24 TOXOC, LFT						FALSE		FALSE					0	40	2.59	1	FALSE					FALSE		
169		FALSE		16 BICTOI	10	3						2 LABETA	20 CLEVIANE						FALSE	TRUE	3	3 UNIDIFT				4	27	0.49	4	FALSE					TRUE	6 IUD	
170		FALSE		6 PARONYSHAL S								24 ECHO HOLTER							TRUE	HIOFAL	FALSE					0	38	3.62	1	FALSE					FALSE		
171		TRUE	LEFTOE	16 VESTIBULAR NEI								25	26 BITAMISTINE 161						TRUE	VESTIBI	TRUE	2	2 VESTIBI			2	40	3.13	2	FALSE					FALSE		
172		FALSE		5 POST VIRAL BRO								2 COMPLETE ANTI							FALSE	TRUE	1	2 VIRAL FI				0	38	2.93	1	FALSE					FALSE		
173		TRUE	R-ABDI	16 RIGHT	11							26 VIRISTE	3	3					FALSE		FALSE					1	37	2.9	1	FALSE					FALSE		
174		FALSE		3								2 ELTROX	24 TSH, THYROIDAR						FALSE		FALSE					5	40	2.78	2	FALSE					FALSE		
175	ESCHAF	FALSE		5 VIRAL FEVER-RE								2 COMPLI	24 TSH						FALSE		TRUE	1	3 VIRAL FI			1	38	3.42	3	FALSE					FALSE		
176		TRUE	SYSTOL	4 GRAVES DISEAS								24 TSH,TTI	26 T.NEOMERGAZOI						TRUE	GRAVE	FALSE					2	38	2.94	1	FALSE					FALSE		
177		TRUE	LOUD S	4 GRAVES	11							26 REFERE	26 PTUSIV	6 METFORMINSRE					TRUE	GRAVES	TRUE	1	1 DEOREA			2	38	2.72	3	FALSE					FALSE		
178		FALSE		5 POST VIRAL BRO								13 STP ASTHALIN							FALSE		FALSE					0	39	3.16	3	FALSE					FALSE		
179	RAILLI	FALSE		5 :ATIPIC	19 GASTRITIS							26 RANTIDIONE BVC							FALSE	TRUE	1	1 ESBLUF				0	40	2.7	1	FALSE					TRUE	3 NURSEV ADMISSION	
180	WITLOGC	FALSE		3	1 CONSTITUTIONA							9 T.ELTROMIN5M							FALSE		FALSE					2	36	2.13	1	FALSE					FALSE		
181		FALSE		10	11							5 TLABET	3	24 TSH,ACILA-MOF					FALSE	TRUE	1	1 C/CH HIF				2	38	2.82	3	FALSE					FALSE		
182	RIGHT	FALSE		16 CARPEL TUNNEL								1	14 PARACETANOLI						TRUE	ISTKID	FALSE					0	38	3.64	3	FALSE					TRUE	7 RIGHT PNEUMOTHORAX	
183		TRUE	BILINSI	5 POST VIRAL BRO								13 MOIAST	11 STP BENADPOL						FALSE		FALSE					0	40	2.9	1	FALSE					FALSE		
184		TRUE	LOUD S	19 DEEP VEIN THROI								19 STOP CI	24 LAACLI	26 INJOLEVIANE 40:					TRUE	DVT-VA	TRUE	1	1 SWITCH			2	38	3.28	1	FALSE					FALSE		
185		FALSE		3	11							9 ELTROX	6 METOF	12 LEVOETIRINE					FALSE		FALSE					3	38	2.73	1	FALSE					FALSE		
186		FALSE		3								2 T.ELTROMIN5M							FALSE		FALSE					0	39	2.78	2	FALSE					FALSE		
187		FALSE		1 DISPNOEA UNDI								24 ECHO LOG TSH							FALSE		FALSE					0	39	3.18	3	FALSE					FALSE		
188		TRUE	RINFRA	13								13 MOIAST	12 LEVOETIRINE						FALSE		FALSE					1	38	2.17	2	FALSE					FALSE		
189		FALSE		1 DISPNOEA UNDI								24 ECHO LOG							FALSE		FALSE					0	32	1.2	3	FALSE					TRUE	5	

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	EF	EG	FH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	FV	FW	FX								
189	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE		54	20.8	100	18	40	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE					
190	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	LEOPOL	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	61	54	72	72	40	40	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE				
191	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	160	95.6	217	88	120	40	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE			
192	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TAMMO	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	95	42	18.4	88	16	70	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE			
193	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	THOM	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	88	47	19.3	100	18	100	40	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE		
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201	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	92			88	16	126	70	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE		
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224	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	164	66	27.8	88	10	120	40	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
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	FY	FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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	GK	GL	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ
234	T-LABET	24	TSH,UP/UC,ANF						FALSE	TRUE	TRUE	1	1	1	0	34	2.08		3	TRUE		TRUE				
235	MDISEP	10	AZITHR	24	NEPHROLOGY CC				TRUE	SUBNEF	FALSE	1	1	1	0	34	2.07		2	FALSE		FALSE				
236	ELTROXIN 100 MC	10	ELTROXIN 100 MC						FALSE	FALSE	FALSE				0	34	2.27		2	FALSE		FALSE				
237	ELTROXIN 37.5 MC	10	ELTROXIN 37.5 MC						TRUE	SEIZURI	FALSE				1	40	2.24		1	FALSE		FALSE				
238	LEMPIL	13	MDI,AST	10	AZITHROMYCIN				FALSE		FALSE				0	34	2.3		1	FALSE		FALSE				
239	ELTROX	15	HCG 400	20	CLEANSANE 4.0 BD S				FALSE		FALSE				8											
240	SYP,ASTHALIN								FALSE		FALSE				0	40	3.28		1	FALSE		FALSE				
241	UDCA 34	22	CALAMINE LOTIC						FALSE		TRUE	2		1	0	37	3.13		3	FALSE		FALSE				
242	DIGONIN, LASIK, 3								TRUE	RHD-S/	TRUE	1		4	0	34	1.95		3	FALSE		TRUE				5 PRETERM
243	ELTROX	6	METFORMIN 500						FALSE		FALSE				1	39	3.23		2	FALSE		FALSE				
244	OSELTA	13	METFORMIN 500						FALSE		FALSE				1	34	1.68	2.04	2	FALSE		TRUE				5
245	5 NICARD	5	NICARD	6	METFORMIN 750				FALSE		TRUE	2		3	0	36	1.4		3	FALSE		TRUE				5 PRETERM
246	AZATHIOPRINE, I								TRUE	TAKAYF	TRUE	1		1	0	40	2.34		3	FALSE		FALSE				5 PRETERM
247	AZITHR	13	ASTHALIN SYP						FALSE		FALSE				0	38	2.88		1	FALSE		FALSE				
248	T-LABET	9	ELTROXIN 75 MG						FALSE	HYPOTH	TRUE	1		1	0	38	3.12		1	FALSE		TRUE				6 HOLOPROSEPHALY
249	ELTROXIN 75 MG								FALSE	ACUTE	FALSE				2	20			4	FALSE		FALSE				
250	STOP,ANTHYPEN		MUSCLE STRENC						TRUE	WAL	FALSE	1		1	0	36	2.9		3	FALSE		FALSE				
251	STOP,ANTHYPEN								TRUE	GDHCL	FALSE				2	37	2.48		3	FALSE		FALSE				
252	METFOR	6	METFOR	7	INSULTARD 12 U				TRUE	GDHCL	TRUE	1		2	0	39	3.45		1	FALSE		FALSE				
253	OPTINIS								FALSE		FALSE				0	39	3.25		1	FALSE		FALSE				
254	ELTROXIN 25 MC								FALSE		FALSE				1	38	3.25		1	FALSE		FALSE				
255	ADMITF	23	ELMECOB,CALCI						TRUE	PREGES	FALSE				4	37	3.18		3	FALSE		FALSE				
256	METFOR	7	INSULT	24	INVEST-HEATC,T				TRUE	TINEAO	FALSE				0	39	3.09		1	FALSE		TRUE				5 VOMITING
257	MDISEP	11	SYP BEF	12	T. LEVOCETIRIZIN				FALSE		FALSE				1	37	2.46		1	FALSE		FALSE				
258	ELTROX	6	METFORMIN 750						TRUE	LRENAL	TRUE	5		4	0	33	1.28		2	TRUE		TRUE				5 PRETERM
259	LABETA	19							FALSE		FALSE				1	38	2.61		2	FALSE		FALSE				
260	CRW,WT	1							FALSE		FALSE				2	38	3		3	FALSE		FALSE				
261	ECHO	23	T.PREDI	6	T.METFORMIN 1 G				FALSE		FALSE				5	37	2.74		2	TRUE		FALSE				6 RPOD, C
262	T-LACVOI	17	T.PREDI	6	T.METFORMIN 1 G				TRUE	FISSUR	FALSE				0	38	3.7		3	FALSE		TRUE				3 NURSERY
263	T-ELTRC	26	T.DORTYLAMINE,T						FALSE		FALSE				1	38	3.7		3	FALSE		FALSE				
264	ELTROXIN 1000								FALSE	MS-SVF	FALSE				0	39	3.08		2	TRUE		FALSE				6 SKIN WC
265	DOROP	5	METOPE	10	PENTID 400 MGB				TRUE		FALSE				1	37	2.16		2	FALSE		FALSE				
266	DOROP	3	CREP BANDAGE,						FALSE		FALSE				1	39	3.57		1	FALSE		FALSE				
267	DOROP	3							FALSE		FALSE				3				1	FALSE		FALSE				
268	ELTROX	19							TRUE	SEIZURI	TRUE	1		1	0	35	2.07		1	FALSE		FALSE				5 HYPOLGYOEMIA
269	AZORAF	23							FALSE		FALSE				1	35	2.27	2.03	1	FALSE		TRUE				
270	ELTROX	23							FALSE		FALSE				4				2	FALSE		FALSE				
271	PROPRYLTHIOU								FALSE		FALSE				2	38	3.75		2	TRUE		FALSE				2
272	ELTROX	24	MOV, ANA, UP/AN						TRUE	ID-CON	FALSE				1	38	3.75		1	FALSE		FALSE				
273	ELTROX	24	VITANIP	23				26 T. TLE 11	TRUE	IDROFO	FALSE				0				1	FALSE		FALSE				
274	REFERRED TO IDI								TRUE	O/CHT	FALSE				7				1	FALSE		FALSE				
275	ALPHA	6	METFOR	9	ELTROXIN 150 MC				TRUE	PREGES	FALSE				1	38	3.26		3	FALSE		FALSE				
276	LABETA	19	SEROFLOW MDI	6	METFORMIN SR1				FALSE		FALSE				2	38	2.9		2	FALSE		FALSE				
277	SPIROP	13	SEROFLOW MDI	6	METFORMIN SR1				FALSE		FALSE				3	38	2.5		3	TRUE		FALSE				2 MANUS
278	STOPLA	14	STOPLA						FALSE		FALSE				1	38	2.5		3	TRUE		FALSE				6 PRENVI
279	ELTROX	6	METFOR	19					FALSE		FALSE				0	40	3.12		3	FALSE		FALSE				
280									FALSE		FALSE								1	FALSE		FALSE				
281	ELTROXIN 75 MC								FALSE		FALSE				1	39	3.3		1	FALSE		FALSE				5 MECONIUM ASPIRATION
282	USG CH	1							FALSE		FALSE				1				1	FALSE		FALSE				
283	USG CH	1							FALSE		FALSE				4				1	FALSE		FALSE				
284	USG AB	26	HEPATC	9	ELTROXIN 150 MC				TRUE	HEPAT-	FALSE				0				1	FALSE		FALSE				
285		19							FALSE		FALSE								1	FALSE		FALSE				
286	ELTROX	3							FALSE		FALSE				2	40	3.01		1	FALSE		FALSE				
287	ELTROX	3	DOROP	24	HINISWAB				FALSE		FALSE				0	39	3.4		3	FALSE		FALSE				
288	AZITHR	13	DERMO	26	12% AMYLASE OF				TRUE	DERM+	FALSE				0				1	FALSE		FALSE				
289	ANALCO	26	DERMO	26	12% AMYLASE OF				FALSE		FALSE				0				1	FALSE		FALSE				
290	AZITHR	13	MDISEROFLOW 1						FALSE		FALSE				0				1	FALSE		FALSE				
291	MDISEP	23	METHYLOOBALA						TRUE		FALSE				10	37	2.48		1	FALSE		FALSE				
292	COLOP	24	PARACI	1					FALSE	GDHCL	FALSE				2	38	2.9		1	FALSE		FALSE				
293	ANA, C3	15	HCR 2000 OD						FALSE		FALSE				2				1	FALSE		FALSE				
294									FALSE		FALSE								1	FALSE		FALSE				
295	TSH,TF	1							FALSE		FALSE				2				1	FALSE		FALSE				
296	CARBAMAZEPIN						18	GLOBAB	TRUE	EPILEP-	FALSE				0				1	FALSE		FALSE				
297	TSH,CR	5	ALDOMI	3					FALSE		FALSE				5				3	FALSE		FALSE				5 EXTREMELY LOW BW
298	ALDOMI	20	INJ. HEF	2	ELTROXIN 75, PRI				TRUE	SLE-LN	TRUE	2		1	0	27	0.63		3	FALSE		TRUE				
299	METFORMIN 500								TRUE	DERM+	TRUE	1		1	0	39	3.16		2	FALSE		FALSE				
300	METFOR	9	ELTROXIN 50 MC						FALSE		FALSE				4	39	3.94		3	FALSE		FALSE				
301	NEOMERCASOLE								FALSE		FALSE				0	38	3.33		1	FALSE		FALSE				
302	302								FALSE		FALSE				1				1	FALSE		FALSE				
303	303								FALSE		FALSE				1				1	FALSE		FALSE				
304	304								FALSE		FALSE				1				1	FALSE		FALSE				
305	HE MCW	10	OSELTA	13	MDISEROFLOW 1 M				TRUE	ACUTEL	FALSE				1				1	FALSE		FALSE				
306	STOP, ELTROXIN								FALSE		FALSE				1	36	2.47		1	FALSE		FALSE				

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
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300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
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300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
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300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360			
300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325</																																						

[illegible]

GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GY	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ
STOP ELTROXIN							FALSE	FALSE	FALSE				1	36	2.47			1	FALSE		FALSE				
ELTROXIN 125 MC							FALSE	FALSE	FALSE				2					FALSE		FALSE					
DERMR 24 USGAB			26	T.UDCA 150 MGT			TRUE	PUPPP	TRUE	3	1	HYPERE	0	32	1.9	1.52	3	TRUE			TRUE	5			
24HRUI 4							TRUE	NEPHR	TRUE	1	1	GLOMEF	1	18			4	FALSE			TRUE	6			
ELTROXIN 100 MC							FALSE	FALSE	FALSE				0		3.22		3	FALSE			FALSE				
EEG 1							TRUE	HYPOTH	FALSE	1			1	38	3.29		1	FALSE			FALSE				
ELTROX 3		19					FALSE	FALSE	TRUE	1	1	CYCHTN	2	26	0.67		4	TRUE		6	HELLPS	6			
LABELTA 6 METFOF							FALSE	FALSE	FALSE									FALSE			FALSE				
RHEUM 16 AZORAN 100 MG			17	T.WYSO			FALSE	TRUE	TRUE	1	1	FALSEL	0	40	3.78		3	FALSE			FALSE				
LFT,ORI 17 PREDNI			2	ELTROXIN 75.T.			TRUE	TAKAY	FALSE				3	37	3.47		1	FALSE			FALSE				
MDI ASTHALIN P							FALSE	RHEUM	FALSE				0	38	3		1	FALSE			FALSE				
NOANTI 24 TSH			9	ELTROXIN 25 MC			FALSE	FALSE	FALSE				3					FALSE			FALSE				
PARACI 1							FALSE	FALSE	TRUE	1	1	THREAT	0	33	2.3		1	FALSE			TRUE				
TSH,TFI 1							FALSE	FALSE	FALSE				0	38	2.45		1	FALSE			FALSE				
							FALSE	FALSE	FALSE				1	40	2.8		3	FALSE			FALSE				
							FALSE	FALSE	FALSE									FALSE			FALSE				
ALPHA 19 ECOSPIRIN							TRUE	PHEOC	TRUE	2	4	OBG,EN	0					FALSE			FALSE				
MDI SEROFLO.MI							FALSE	FALSE	FALSE				0	39	3.2		3	FALSE			FALSE				
T.NEMPRO 40 MG							FALSE	FALSE	FALSE				0	40	3.39		3	FALSE			FALSE				
STOP LABETALO							FALSE	FALSE	FALSE				0	37	2.36		2	FALSE			FALSE				
ELTROXIN 25 MC							FALSE	FALSE	FALSE				0	18			4	FALSE			TRUE				
ELTROXIN 50 MC							FALSE	FALSE	FALSE				2					FALSE			FALSE				
LABELTA 6 METFOF		7	ACTRAPID,INSU				TRUE	TYPE IIC	FALSE				2					FALSE			FALSE				
							TRUE	COUGH	FALSE				0					FALSE			FALSE				
METFOF 4		16	AZATHI	17	PRED 30	2	TRUE	AIHA(H	TRUE	2	3	UTL,FAL	1	36	2.42		3	FALSE			FALSE				
RENALI 5 LABELALOL 200I							TRUE	FOR REC	TRUE	1	4	RECANA	2					FALSE			FALSE				
							FALSE	FALSE	FALSE									FALSE			FALSE				
ELTROXIN 50 MC							FALSE	FALSE	FALSE				0	36	2.5		3	TRUE			FALSE				
ELTROX 24 TSH,HL			23	INJ. METHYLOOB			FALSE	FALSE	TRUE	1	1	FALSEL	1	39	2.64		3	FALSE			FALSE				
MDI FORMONIDE							TRUE	BA(AST	FALSE				4					FALSE			FALSE				
UP/UUC,URINE R							TRUE	YOUNG	FALSE				0	38	2.5		1	FALSE			FALSE				
							FALSE	FALSE	FALSE									FALSE			FALSE				
ELTROXIN 25 MC							FALSE	FALSE	FALSE				1					FALSE			FALSE				
ELTROXIN 100 MC							FALSE	FALSE	TRUE	1	2	HYPERE	1					FALSE			FALSE				
METFOF 19							FALSE	FALSE	FALSE				2	33	1.72		3	FALSE			TRUE				
TSH 1							FALSE	FALSE	TRUE	1	1	SEVERE	0	38	3.09		1	FALSE			FALSE				
METFOF 7 MIXTAR		19					FALSE	FALSE	FALSE				6					FALSE			FALSE				
TSH 1							FALSE	FALSE	TRUE	1	1	ANNIET	1	39	2.93		1	FALSE			FALSE				
							FALSE	FALSE	FALSE									FALSE			FALSE				
METFOF 19			10	AMOXICILLIN			FALSE	FALSE	FALSE				2					FALSE			FALSE				
NO MEDICAL ISS							FALSE	FALSE	FALSE				2	38	2.89		3	FALSE			FALSE				
EEG,ECG							FALSE	FALSE	FALSE				0					FALSE			FALSE				
ELTROX 19							TRUE	DERMA	FALSE				0	37	2.55		1	FALSE			FALSE				
ELTROX 23 METHYLOGBALA							FALSE	HYPOTH	FALSE				2					FALSE			FALSE				
ELTROXIN 25 MC							FALSE	FALSE	FALSE				1	7			4	FALSE			TRUE				
INDUCED AND DE							FALSE	FALSE	TRUE				1					FALSE			FALSE				
ELTROX 6 METFORMIN 250							FALSE	FALSE	FALSE				0	35	1.97		2	FALSE			TRUE				
							TRUE	EPC-PA	TRUE	1	2	PAROX	1	38	2.21		1	FALSE			FALSE				
ELTROXIN 25 MC							FALSE	FALSE	FALSE				1					FALSE			FALSE				
AZITHROMYCIN							FALSE	TRUE	TRUE	1	1	FALSEL	0	39	2.86		3	FALSE			FALSE				
CETRIZINE							TRUE	SUBAOI	FALSE				0	38	2.52		1	FALSE			FALSE				
T.UDCA 150 MGB							FALSE	FALSE	FALSE				0	37	2.54		3	TRUE			FALSE				
ELTROX 26 ANTIREFLUX ME							FALSE	FALSE	FALSE				1					FALSE			FALSE				
DERMATOLOGY							FALSE	FALSE	FALSE				0					FALSE			FALSE				
OG REFERRAL							FALSE	FALSE	FALSE				0					FALSE			FALSE				
							FALSE	FALSE	FALSE									FALSE			FALSE				
ELTROXIN 50 MC							FALSE	FALSE	FALSE				0					FALSE			FALSE				
OSELTA 13 SYP AS			12	LEVOCET			FALSE	FALSE	FALSE				0	28			4	FALSE			TRUE				
WANGAT 26 PHYSIOTHERAP							FALSE	FALSE	FALSE				0	37	2.3			FALSE			FALSE				
MDI SEC 26 ENT CONSULT							TRUE	ENT-GE	FALSE				1				1	FALSE			FALSE				

	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GZ	HA	HB	HC	HD	HE	HF
380									TRUE	ENT-GE	FALSE								FALSE			FALSE
381		13 MDI SEC	26 ENT CONSULT						FALSE		TRUE	1	1 GESTAT	1	37	2.87		1	FALSE			FALSE
382		24 ECHO, 24 HR URI							FALSE		FALSE								FALSE			FALSE
383									FALSE		FALSE								FALSE			FALSE
384	1								FALSE		FALSE				0				FALSE			FALSE
385		9 ELTROXIN 50 MC							FALSE		FALSE				2				FALSE			FALSE
386		25 FORPULSE METH							FALSE		FALSE				0				FALSE			FALSE
387		6 METOF	9 ELTROXIN						FALSE		FALSE				2	39	2.86		2	FALSE		FALSE
388		5 T LABEL	4						FALSE		FALSE				1				FALSE			FALSE
389									FALSE		FALSE								FALSE			FALSE
390		26 PSYCHIATRY CO							TRUE	ADJUST	TRUE	1	1 FALSEL		0				FALSE			FALSE
391	3								FALSE		FALSE				0				FALSE			FALSE
392		2 HQ0.400 MG OD							FALSE		FALSE				0				FALSE			FALSE
393		12 T. CETRIZINE 10 M							FALSE		FALSE				0				FALSE			FALSE
394		26 PANTOPRAZOLE							FALSE		FALSE				0				FALSE			FALSE
395		24 ECG, EC	26 REFER TO CARDI					26 TORSAT	TRUE	CARDIO	FALSE				0				FALSE			FALSE
396		24 CBC, TS	26 DERM CONSULT						FALSE		FALSE				2				FALSE			FALSE
397		26 TRYPTOMER 10 M							FALSE		FALSE				1				FALSE			FALSE
398		5 LABETO	24 ECG, UP/UC, CRE						FALSE		TRUE	1	1 SEVERE		0	28	0.89		3	FALSE		TRUE
399									FALSE		FALSE								FALSE			FALSE
400									FALSE		FALSE								FALSE			FALSE
401	24 H1M1 SW	10 OSELTAMIVIR 75							FALSE		FALSE				0	37	3.12		3	FALSE		FALSE
402									FALSE		FALSE								FALSE			FALSE
403		24 TC, DC, T	13 ASTHAL	12 LEVOCET					FALSE		FALSE				0				FALSE			FALSE
404		12 CETRIZINE							FALSE		FALSE				0	2.94			FALSE			FALSE
405		18 LEVIL 500 MGB							FALSE		TRUE	1	1 GDM-GI		0				FALSE			FALSE
406		9 ELTROX	4						FALSE		FALSE				1				FALSE			FALSE
407		9 ELTROXIN 100 MC							FALSE		FALSE				1				FALSE			FALSE
408		1 HYDRATION							FALSE		FALSE								FALSE			FALSE
409									FALSE		FALSE								FALSE			FALSE
410									FALSE		FALSE				3				FALSE			FALSE
411		9 ELTROX	13 MDI ASTHALIN						FALSE		FALSE				3				FALSE			FALSE
412		24 PHENYT	18 LEVIL 1 GMB						FALSE		FALSE				3				FALSE			FALSE
413		5 LABETALOL 100 P							FALSE		FALSE				0				FALSE			FALSE
414		2 AUTRIIN	19						FALSE		FALSE				1				FALSE			FALSE
415									FALSE		FALSE								FALSE			FALSE
416		9 ELTROXIN 75 MC							FALSE		FALSE				1				FALSE			FALSE
417		24 ECG, EE	26 CARDIO CONSULT						FALSE		FALSE				0				FALSE			FALSE
418		24 BETADOL	24 CBC, CF	13 SYP, ASTHALINE					FALSE		FALSE				1	38	2.88		1	FALSE		FALSE
419		24 RPTAP	20 HEPARIN 8000 U						TRUE	SIP AVF	TRUE	1	1 SHIFTIN		4				FALSE			FALSE
420									FALSE		FALSE								FALSE			FALSE
421	1								FALSE		TRUE	1	2 DENGUE		1	39	2.64		1	FALSE		FALSE
422		9 ELTROXIN 100 MC							FALSE		FALSE				0				FALSE			FALSE
423									FALSE		FALSE								FALSE			FALSE
424									FALSE		FALSE								FALSE			FALSE
425									FALSE		FALSE								FALSE			FALSE
426									FALSE		FALSE								FALSE			FALSE
427									FALSE		FALSE								FALSE			FALSE
428									FALSE		FALSE								FALSE			FALSE
429	24 INR								FALSE		FALSE				0	40	3		3	FALSE		FALSE
430		14 PARACETAMOLI							FALSE		TRUE	1	1 HYPERE		0				FALSE			FALSE
431									FALSE		FALSE								FALSE			FALSE
432									FALSE		FALSE								FALSE			FALSE
433									FALSE		FALSE								FALSE			FALSE
434									FALSE		FALSE								FALSE			FALSE
435									FALSE		FALSE								FALSE			FALSE
436									FALSE		FALSE								FALSE			FALSE
437									FALSE		FALSE								FALSE			FALSE
438									FALSE		FALSE								FALSE			FALSE
439									FALSE		FALSE								FALSE			FALSE
440									FALSE		FALSE								FALSE			FALSE
441									FALSE		FALSE								FALSE			FALSE
442									FALSE		FALSE								FALSE			FALSE
443									FALSE		FALSE								FALSE			FALSE
444									FALSE		FALSE								FALSE			FALSE
445									FALSE		FALSE								FALSE			FALSE